

THE
SOUTHERN AGRICULTURIST.

JULY, 1838.

PART I.

EDITORIAL AND ORIGINAL.

To the Distressed Inhabitants of the City of Charleston.

Seeing from the Act of the Legislature, as well as from the Ordinance of our City Council, that in future we are restricted to the use of incombustible materials in erecting our buildings, and knowing as I do the high price of such, and the difficulty of getting them at so high a price, I would suggest the use of *Pisé*, or rammed clay walls. This mode of building is of great antiquity, and brought to such perfection in the country about the beautiful city of Lyons, in France, as to appear like elegant palaces, some of which are known to have stood three hundred years. But to be concise on this subject: I have just erected the walls, and covered in a house of 48 feet long by 24 wide, containing six large rooms, and three wide passages; and though built under many difficulties which I had to surmount as I went on, yet it will bear comparison with any brick house of the same size, and was built in nine months by two men only, (who hired out at \$10 per month before employed on this work) assisted by a black country carpenter for three weeks. From the experience I have gained in the erection of this house, I can with confidence recommend (if my directions are followed) the use of *Pisé buildings*; viz.—The foundation must be stone or brick, raised twelve to eighteen inches above the ground. The mold, which is very simple, must be a piece of 3 by 4 scantling, laid across the foundation, with a mortice at each end, describing the width of your wall, allowing for the thickness of the boards that are to stand on their

edges, with their sides to the studs of scantling, standing in the mortices of the transverse scantling already mentioned, and capped with a piece of same width; these studs to be erected three or four feet apart. The flooring boards intended for the house, and which require seasoning, will just answer for this purpose, and will not be the least injured from this use, but better seasoned. They must be reduced to one thickness, and cut with a mitre at one end to meet at the corners, clasped with tin or sheet iron clasps, secured with small screws. These may be taken off every other course, and used as before. In this mold so formed, lay six inches of clay, as dry as you can procure it, (I never found it too dry) and commence ramming, with a rammer beveled from a square of six inches, to one inch all on one side. The Pisadore (who is the rammer) finding it will not yield more to this rammer, then commences with a square rammer, 'till it rebounds briskly from the wall; he then continues filling in, continuing the same process 'till the boards are full, and he lays another board on the edge of that just finished, and continues this process until the story is raised to receive the joists. These are laid on a piece of scantling 3 by 4, laid along in the mold, and each end is well dovetailed. This being effected, I would recommend that the mold be taken apart from the wall; it will be found an equal continued surface, resembling a piece cut out of a rock, of the color of the clay. If this has any blemishes (or inequalities of surface) from the clay sticking to the mold, they can be immediately remedied by a plaster made of the same clay, with a mixture of cotton or hair. This being done, lay on the whole wall a coat of linseed oil. It will immediately sink in, and form an indurator, that will convert the surface to a crust of putty, impervious to rain, or any kind of moisture. After you have given the wall a coat or two of the oil, you may paint it of any color you wish, which it will shew and retain, with the greatest brilliancy. Then erect your mold on the next story, and continue as before, laying (which I forgot to mention) your door and window jambs plumb in their proper places in the mold, as you go along. This mold possesses many advantages over the one which I described in my former article in the *Agriculturist*. It turns out the work in one continued mass, as if chiseled from a rock, and by this the work is reduced to three-fourths of

the labor, and much more planished and perpendicular. In this manner, a Pisé house can be built as elegant, durable, strong and incombustible, as of any other material allowed to be used. Its expense will depend much on the locality and vicinity of the clay, to the place it is erected. Having the clay at hand, my Pisadore (or rammer) and one attendant, carried up sixteen inches of a wall, sixteen inches thick, in four days, all round a house, 48 feet long, and 24 feet wide. Now, if to build such a wall sixteen inches high, requires four days, how many days will it take to build it thirty-six feet high, the full height of a three story house? Answer 108 days; which, at one dollar per day, would be equal to \$216.

A brick house of this size would require	
100,000 bricks, which at \$15 per M.,	
will amount to - - - - -	\$1500 00
Lime at 25 bushels per M., is 2500 bushels,	
at 20 cents, - - - - -	500 00
Laying the bricks at \$4 per M., is - - -	400 00
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Cost of the walls of the dwelling house only,	\$2400 00
Deduct the price of building the Pisé house,	216 00
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In favor of the Pisé house, - - - - -	\$2184 00
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But this is not all, for in a brick house you have to build a wood one within to make it fit to be inhabited, plaster and studs, laths, lime, nails and stucco, will amount to \$1200, making the round sum of \$3384. In opposition to this, I will state, the pisé walls require no plaster, but only to be smoothed and painted plain, or penciled, as taste may dictate. The Pisé house being painted as it comes out of the mold, is fit to be inhabited as soon as finished.

But the difficulty of procuring clay is objected to. This will cease when we are informed, that all the bluffs about our harbor and rivers, contain it in abundance, and may be wafted over in lighters, and sold at a low price. Our harbor, and the rivers and creeks around us, contain inexhaustible banks of dead shells, which, if rammed in such a mold, will produce a fine wall equal to Tabby, well known to many of us. The banks of Ashley river abounds in a concretion of calcarious matter fit for such buildings. To this important hint I call your attention.

The doctrine that I have been endeavoring to inculcate, admits of the clearest demonstration, *actual experiment*. Take a box of a handy size, ram it with clay as described. When so filled and rammed, turn it up on a board, and lay it in the sun to dry, so as the box or mold may be lifted off without injury to the pisé'd work. When dry, indurate it with linseed oil, and when it is dry, paint it on either side with any color you please. This experiment will satisfy you of the strength of the walls, the effects of the oil as an indurator, and the beautiful appearance of the paint.

I remain, with best wishes, yours, &c.

BARTH'W. CARROLL.

On Ruta Baga and Gama Grass.

Mr. Editor,—Mr. Jonathan Evans, near Fayetteville, N. C., is informed, that ruta бага (and all the other kinds of turnips) can be raised in the middle and low country of the Carolinas and Georgia, in as great perfection, as they can be in any part of the world, and with much less trouble and expense, than in more Northern climates, the light sandy soils of those regions being admirably adapted to their production, and the climate is so favorable, that they can be left in the field to grow all winter. The culture is as easy, if not more so, than that of any crop, now planted at the South. The best turnip soils, are our high dry pine barren land, a coat of cowpen or compost manure spread evenly and ploughed under, is the best preparation of the soil; let the roller and harrow follow the plough, and in the same day, if it be possible, sow the seed while the earth is moist, for it will vegetate quicker and stronger in land that is fresh stirred—this will be more necessary in the early sowings, when the sun is powerful, and our heavy fall rains are apt to destroy such small plants as turnips, before they get their second pair of leaves; after they attain that age, there is no further risk. The best time to sow for the section of country before named, is from the 20th of July to the 1st September, or even a fortnight later, but the late sowings will not produce as large turnips, but they will be much

better for table use. They are best sown with a turnip drill, in rows about thirty inches apart, and thinned in the rows to twelve or fifteen inches from plant to plant; with a drill, a pound of seed is more than enough to plant an acre, but it is mistaken economy to be sparing of seed, as the cost of it, bears no relative proportion to the value of the crop. The great advantage of the drill, is the complete command of time, by putting it in the power of the farmer to take the advantage of the season. Three or four acres can be sown in a day with a single drill, which may be managed by a boy. If the land is not sufficiently moist after harrowing, it is advisable to wait for a shower. The after culture consists in stirring between the rows with a cultivator, as soon as the plants are well up, destroying all weeds among the plants, and thinning to the before mentioned distance, as soon as they get their second or third pair of leaves, and in the narrow spaces not reached by the cultivator, a small hand hoe must be used. Two ploughings with the cultivator, and the same number of hoeings, will be sufficient, but it will be advisable to earth the plants at the last working, by throwing just enough of earth to cover the bulbs about one inch, which will protect them from frost, they then may be left in the field and pulled when wanted, all further trouble of protection being rendered unnecessary by the mildness of the climate. I omitted to mention that the plants pulled up in thinning, may be transplanted, and will produce nearly as heavy a crop as those left where sown, and with the advantage of having time to manure and prepare the land to receive them in the best manner—they will be a little later, which is the only perceptible difference between them and those not transplanted. A smart hand, with a dibble or setting stick, can put out with ease, half acre a day.

Mr. Evans is informed, that the writer knows of no grass to compare with the Gama grass—its production is greater than that of clover or lucern, in their most favored climates, and grows with luxuriance, and yields abundantly, where those two would perish. He is now finishing his fourth cutting, and could, if required, cut a fifth time, such is the rapidity of its growth, that ten or twelve cuttings more, will be obtained the present season. Horses and cows are particularly fond of, and thrive well on it—

the latter yielding an increased quantity of delicious rich milk, when freely supplied with it, in its green state.

The culture of root crops is increasing at the North, and will, I hope, become general with our planters here at the South; when that period arrives, our agriculture will improve, and may be made to surpass that of any other country; but until we pay more attention to raising root crops and grass, as food for our stock, with a view to an increased quantity of manure, we shall neither have fat cattle nor productive fields.

I may probably send you for your August number, an account of an experiment in the culture of Carrots, as food for stock.

J. ENLIM.

June 1st, 1838.

It may be well to state, that I have raised over six hundred bushels of ruta бага on an acre, while on land more highly manured, I have not exceeded one hundred and fifty bushels of sweet potato slips, on the same quantity of land, and the last required the most labor.

Mr. Enlim will confer a favor, by furnishing us an account, of his experiment in the culture of the Carrot.
—*Editor.*

On the Cultivation of Corn and Cotton.

Orangeburg, June 2, 1838.

I usually commence planting corn, about the 20th of March, and as I generally prepare my ground with the plough, before I commence planting, I begin then to haul out my manure. I manure about one half of my corn ground—with the rest of my ground for corn, I adopt the alternate system of one year's tilth, and one of rest. When I have finished planting my corn, which occupies from six to seven days, I prepare my ground for potatoes, which I then plant. I usually employ the leisure intervals I have from the time I commence planting corn, until I commence planting cotton, in making up cotton beds, &c.

My usual time for commencing to plant cotton, has been about the 10th of April, and it takes about 10 days

to plant the crop. I have for several years adopted the plan of making shallow chops on the bed with the hoe, for the reception of the seed, and I cover very lightly. I plant about three feet between the beds, and from 12 to 20 inches on the bed. That though must depend always on the quality of the land—but I have no land, however light, that I would plant cotton nearer than 12 inches on the bed.

While I am planting the cotton, my plough hands are breaking up the boxes of my corn ground, with shovel ploughs. (I have one-third of all my effective force in ploughs) and after planting a few acres of rice, I then begin to thin out, and mold my corn. I plant my corn 44 feet each way, and leave but one stalk in the hill—my hands can easily work over an acre a piece every day. As soon as I have molded the corn, I immediately plough it over with the sweep plough—which plough, with its wing, can be made to run very near the young corn, without injuring it.

At the same time I commence working my cotton. I *always* hoe down first. I think it is of much importance to the plant to take away carefully the earth and young grass from its roots, as soon as it comes up, and it especially assists in the subsequent tending. Three or four days after the cotton is hoed down, I follow with the sweep plough—which more effectually than any plough I have used, destroys the grass, and throws up enough earth to support the plant until the next working. I then *thin out* to a *stand*, and draw up with the hoe (on the same day) the loose earth thrown up by the plough. I always thin out at first to a stand. The young plant in each chop which you wish to preserve, grows off faster, and is less likely to die, than if three or four, or even two stalks, are left together—and time and labor are saved.

After I have thinned and drawn up the whole, I again go over the same course, i. e. hoe down the second time—follow up with the sweep plough, and draw up again—which workings make the crop. Though it is frequently necessary to run one or two furrows with the shovel plough, and draw up again when the plant is bearing, in order to *lay by* with a large bed, and destroy any grass which may have escaped the former workings.

While all this is going on, I have been ploughing my corn—the third time, still with the sweep plough. At the fourth ploughing, (with the shovel plough) I plant peas, which usually happens about the last of May. After the next (or fifth) ploughing, with the sweep plough, which happens about the last of June, I lay by (bed) or hill the corn with the hoe.

I take time during the working of my cotton crop, to hoe down and draw up the potatoes, and work over the rice twice or three times.

I would remark in closing, that many planters about me adopt a very different system from the one I have here mentioned. They plant largely and tend carelessly with ploughing, but I doubt whether, in a number of consecutive years, they can realize more. By their system, they must necessarily plant much more provision land; must expend a large capital in horses; and whenever the seasons are adverse, must work much harder. I could mention other disadvantages of their system, but those I have suggested have been sufficient to convince me.

COTTON.

Rules for the Government of Overseers.

Colleton, May, 1838.

Mr. Editor,—One of the best overseers I ever had, laid down the following rules for his regulation. There are some excellent things in them, and I would advise overseers to write them out, and place them over their mantle pieces for observance.

Yours,

P. C.

RULES.

1.—Before going to bed, I will think over what I have to do the next day, and note it upon my slate, in order that it may be recollected on the morrow.

2.—I shall rise early, and never let the negroes catch me in bed of a morning, but see that they are all put regularly to their work.

3. After rising, I shall not idle about, but go directly at the business of my employer. I shall see that the negroes are at their work—that the horses have been fed, the cattle attended to, &c. If any of the negroes have been reported as sick, I shall without a moment's delay, see what ails them, and if they be really sick, I shall at once see that proper medicine and attendance are given.

4. Wherever the negroes are working, I shall consider it my duty to be frequently with them, in order that I might see how they get along. I shall not content myself with doing this once a day; but I shall do so repeatedly, observing every time what they are doing, and how they do it. I shall never permit them to do any work wrong, if it take them the whole day to do it right.

5. *Negroes.*—I shall see that the negroes are regularly fed, and that they keep themselves clean—once a week, at least, I shall go into each of their houses, and see that they have been swept out and cleaned. I shall examine their blankets, &c., and see that they have been well aired—that their clothes have been mended—and that every thing has been attended to, which conduces to their comfort and happiness.

6. *Horses.*—I shall consider it my business to see that the horses are properly fed and rubbed—that their stable is well littered. When harnessed and at work, I shall see that their harness fits, and does not gall them, recollecting that these animals, though dumb, can feel as well as myself.

7. *Cattle.*—I shall daily see that the cattle have been penned, and have good litter to lie upon; that they have good water to drink; and that their pasture is good. If they should happen not to have good pasture, I shall at once see how I can procure it for them. I shall let the "cattle-minder" know that he is watched and held responsible for these things.

8. *Milch Cows.*—I shall contrive to procure these the best pastures—if possible, I shall feed them night and morning, and shall so manage it, as always to have something for them to eat when penned.

9. *Houses, fences, &c.*—I shall endeavor never to let these get out of order. The moment I discover any of them out of repair, I shall have them attended to—never forgetting that a "stitch in time saves nine."

10. *Carts, Wagons, &c.*—I shall observe the same rules about these as about the houses, &c., and shall never put off attending to them until I may want to use them, because then I will not have time to do so.

11. *Time.*—I will always recollect that my time is not my own, but my employers; and I shall consider any negligence of his business, as so much unjustly taken out of his pocket.

12. *Visits.*—If any one calls to see me, I shall entertain him politely; but I shall never forget to attend to my business on that account. Business first, and amusement afterwards, shall be my motto. If any of my friends are displeased at this rule, the sooner they cease to be my friends, the better.

An Address delivered before the Beaufort (S.C.) Agricultural Society; by WILLIAM ELLIOTT, Esq., President.

The history of agriculture, is the history of civilization itself: for the companionship will be found on examination, to be so intimate, that it becomes difficult to separate them. If every man depended for the subsistence of himself and family, on the uncertain returns of the chase or the fishery; or on such roots, berries and fruits, as the uncultivated earth spontaneously offers—there would be little chance of advancing beyond the first rude steps in civilization. The *division of labor*, by which one individual may devote himself to one pursuit for which he may be peculiarly fitted, is at the root of all improvement in the arts requiring the sustained attention, and undiverted energy of man; and this devotion is impossible, until the means of regular subsistence are afforded to the individual thus separating himself from the common herd. *Agriculture*, which by multiplying the productive power of the earth, enables one to furnish subsistence for many, disengages all who are thus supplied, from the necessity of searching for the means of subsistence, and thus leaves them at liberty to pursue the track of improvement. Agriculture then, is the nursing mother of the arts—and the names of the first men of the first people of antiquity, are to be found enrolled among her votaries.

Egypt, in the exhaustless fertility of her alluvial soil, and in the fitness of the Coptic race to undergo the labors of cultivation beneath her burning sun, possessed elements of agricultural prosperity, unenjoyed by the other people of antiquity; and accordingly we find her, from the earliest records of sacred or profane history, distinguished for her skill in agriculture, as well as pre-eminent in science. If Moses was learned "in all the wisdom of the Egyptians," it is from the same source that Greece derived her knowledge, and the lights first kindled on the borders of the Nile—from "the hundred gated Thebes,"—from the long lost Memphis—from the hundred forgotten cities, whose names are now unknown, but whose architectural remains, laid bare by the sand-drifts of time, proclaim at once their existence and their grandeur,—these lights, Gentlemen, thus early kindled, in so remote a land, have come reflected from nation to nation, through the revolution of ages, and unperceived and unacknowledged, are shedding this influence, at this moment, on ourselves.

Hesiod, the father of Greek poetry, made agriculture the subject of his verse. His "*Works and Days*," is the oldest Greek poem extant. The accomplished Xenophon has left us, among his other admirable works, a treatise on rural affairs. The Romans derived from the Greeks,—together with their learning—a respect for agriculture. The work of Cato the Censor, "*de re rustica*," comes down to us un mutilated amidst the wreck of so much contemporary learning. Varro, near a century afterwards, wrote a celebrated work on the same subject, under the same title. The *Georgics* of Virgil, written in imitation of Hesiod, are considered the most perfect of his works! What names, Gentlemen, to shew the esteem in which agriculture was held! What genius was put in requisition, to teach its precepts to the passing age, and embalm them for posterity!

If agriculture languished during the dark period that followed the downfall of the Roman power, it revived as the arts of civilization resumed their empire—and the invention of printing, by circulating far and near, the agricultural works, that were once only to be found by the curious in the libraries of the learned, has given general diffusion to the maxims and precepts bequeathed us by the consecrated minds of antiquity. Modern skill, it must

be owned, has added largely to the store. We can but glance at the most striking improvements, but we cannot pass without notice, the application of green crops as manure, for which we are indebted to the Flemings; the introduction of the drill husbandry, for which we are indebted to Jethro Tull; the cultivation of grasses, the rotation of crops, and the application of chemistry to husbandry, for which last we are indebted to Sir Humphrey Davy.

Calcareous manures, were known in Britain, as far back as the invasion of Julius Cæsar; and the improvements that have since been made, in the composition and application of various substances, to increase the natural productiveness of the soil, have been prodigious—but there is reason to believe, that the ultimate point is far from being reached; and that, as the limits of the habitable globe have now been ascertained—as no new Americas remain to be discovered, to absorb the redundant population of an overstocked world—new modes of culture will prevail, enlarging beyond any now conceived measure, the capacity of the earth, to maintain from a given surface, the myriads of human beings who seem destined, in the Divine economy, to inhabit its surface.

The general principles of agriculture, are applicable to a certain extent, to all countries and soils; but an enlightened experience is necessary to enable us judiciously to apply them to our own. The rotations of European husbandry, for example, so essential to them, are unfitted for us in our semi-tropical region: and the experience and practice of Egypt would be far more valuable guides. Like that celebrated country, we grow rice, cotton, indigo, and cane—like her we have river lands enriched by inundations; but unlike her inundation, which is annual, and obeys some mysterious agency untraced as yet by human curiosity—ours obey the tides, and twenty-six times a year, they give us the fertilizing influence of their waters. The rice culture based on these lands, is probably the most productive in the world. The produce of the Po does not equal it; that of the Ganges does not rival it; nor do I know that it is exceeded in China, where, if their chronicles do not deceive, having been cultivated some centuries before the creation of our globe, they enjoy all the advantages of a well “ripened experience.” Besides the obvious advantages derived from our form of government, we have in our scale, virgin lands, water at com-

mand,—the enlightened Anglo-Saxon race, to control and direct, and the African race, to execute. But great as our success in this branch of culture has been, I see no reason to think that it has reached its maximum; and science, in all human probability, has yet somewhat in store, with which to enlighten experience. In the *cotton culture*, we have not attained the same skill. Much as we have learned, as to the preparation of the soil, the drainage, the influence of manure, the selection of seed, the hoeings and thinnings,—we do not yet understand as well as we should, the exact moment at which a field should be laid by, or how to escape the ravages of those insects, which prey upon our matured crops, and destroy in a few days, the labors and the hopes of a year.

The soil of Carolina, is nevertheless the great laboratory of her wealth, and the planter is the principal elaborator. Other classes do indeed add something to the aggregate. The merchant, who exports the domestic product, and replaces it by a foreign article, worth more than that exported, is a *producer* to the full extent of the difference in value. The axeman who fells the forest trees—the sawyer who converts them into boards, and the carpenter who fashions them into useful forms, and converts them into the abode of man—have each, by their labor, produced new values, and are to be registered among the productive classes. But giving full credit to the additions made from these sources to the general stock of wealth, the great mass, beyond all question, proceeds from the agricultural class. Few countries in the world, are so purely agricultural: and as wealth is every where the chief object of taxation, so shall we perceive that the agriculture of Carolina, is assumed to represent it, and is taxed accordingly: not only by the Federal Government, in the duties on bagging chargeable on the cotton, and on negro cloths, blankets, &c., chargeable on the slave who produces it—and both, thus chargeable on the planter,—but we find that agriculture is the favorite and almost exclusive object of direct taxation by our own State. The *lands and negroes* of the planter, pay the great bulk of the funds raised for State purposes: and though a tax is levied on professions, and on stock in trade, it is easy to shew that these, though more circuitously, are substantially in part at least, taxes on the agricultural interest. For is it not true, that the trader considers this

tax, as an item in the cost of his goods? Is not the price of the article on sale, raised so as to cover this tax, and leave him the same profit, as if the tax had never been imposed? If this supposition be just, who pays the tax on stock in trade? not the trader, but the planter who consumes his goods, and who pays this tax, as an item in its original cost. And though in respect to professions, the recoil of the tax on the agricultural interest, is not so clearly to be deduced, there is little doubt, but that a portion of it can be shewn to have taken the same direction. The exception, if any, will be, when the celebrity of the professional character is such, as to attract fees from a foreign country. In that case, he may be said to be a producer, so far as his own country is concerned. He adds nothing indeed to the values already existing in the world, but diverts to his own region, what would otherwise never have circulated there. When the celebrity of Doctor Physic, attracted the sick from the West Indies, from Mexico and South America, to consult him for their complaints, he was a producer, so far as this country was concerned; and when he attracted them from other States of the Union, he was a producer, so far as the State of Pennsylvania was concerned; yet he created no money values, and added not so much to the wealth already existent, as the man who reared a bed of cabbages, or constructed the wheel of a cart. In like manner, Mr. Webster, when his legal celebrity has drawn to him a foreign client, may be said to be a productive laborer, so far as this country is concerned; and where the client comes from another State, so far as the State in which he resides is concerned. Otherwise, the laborer who cultivates his farm, adds more to the aggregate of wealth, than the distinguished Jurist, who does in truth but circulate and transfer values already existing, independent of his efforts. So too, with the gentlemen of the clerical profession—they produce no taxable values; the labors of the pulpit pay no tithes! the tax-collector never reaches them. So too with all who belong to the naval or military service—they and the members of the learned professions stand in the same category: they are politico—economically speaking—unprofitable servants, reaping where they have not sown; producing nothing; absorbing simply, and transferring to themselves, what was before produced by the labor of others! I am not Vandal enough to say, that the

class of the learned professions is therefore useless, or could in any well ordered society, be dispensed with : I merely say that they are not producers, except incidentally, *instrumentally*, as Doctor Paley hath it. The lawyer, by establishing a certain title to land that was before in dispute, may give a character of permanency to the improvements, and authorize the outlay of capital, which will increase its value. The doctor, by healing the diseases of the farmer, may restore his strength, and fit him for the labors of agriculture. The parson, by inculcating the sublime precepts of the Christian morality, may allay the violence of the passions, confirm the reign of law and order, and thus augment the value of all property, by increasing the security of the possessor : and the soldier, armed for the public defence, may shew that a career of violence or rapacity could not be indulged with impunity, and thus secure the blessings of peace. But I repeat, they produce no money values—there is just as much wealth in the State without these classes, as with them. To illustrate my meaning, let us suppose a community altogether composed of lawyers, doctors, divines and soldiers, with no other outfit, than their professional merit ; relying on professional effort alone for support. If the indiscretion of matrimony could be supposed of a community so constituted, the parson might tie the knot, but he could scarcely touch the fee, even for this interesting service ! The lawyer might draw the contingent deeds, and conveyances in posse, but they could convey nothing into his own pocket, (but a promissory note, perhaps, which would require more endorsers at bank, than there were professions in the community.) The doctor might be called to prescribe, but the consolation of curing, would be his only compensation : and the soldier, after a keen reconnoissance, would strike his tent in despair, and march off from a post, that afforded neither pay nor rations. It is wonderful how soon this society would resolve itself into its original elements—no arbitrators would be called in to settle conditions ; they would shake hands and part company with all alacrity, and with infinite good will. But suppose on the other hand, a society all farmers. They would grow corn ; they would raise stock ; they would create values, and secure the means of subsistence. It is true that their society would be considered somewhat primitive ; they would lack some of the comforts and

refinements that belong to the social state, as enjoyed by us, but they could live, could subsist, and after a while, the doctor, who had abandoned the association of the liberal professions, might be called in to set a limb, and liking the comfortable aspect of affairs, might remain, in expectation of another fracture! And the lawyer might be called to settle a boundary between two porsy landholders, whose full barns had made them litigious. And the parson might be found asking a blessing on the labors of the husbandman, and hinting, perhaps, at the reasonableness of tithes. And the soldier, planting his standard in this land so fruitful in forage, might unfurl it to the breeze, and swear with the emphasis of a Texian patriot, to live and die by the country of his adoption. Now, we have *increased numbers* in our community, but no increase of wealth; except indeed instrumentally, or in so far as increase of population is increase of wealth—a notion combated by Malthus, and denied by all members of overgrown families! We have no increase of wealth, but a change merely in the laws of distribution. The wealth of the producers has gone in part to pay for professional services, and has thus been divided among a greater number of participants! Hitherto, gentlemen, the members of the liberal profession have produced nothing—but let the physician, jurist, preacher, militarist, publish a book, and let that book sell, and they are redeemed from their unprofitable state; they have produced values; and are productive laborers in the strictest sense, as well as the farmer, manufacturer, merchant or mechanic.

Now we have seen that the members of the liberal professions (except as before excepted) produce nothing. But they do not devote themselves to a life of study, labor, privation, abstinence, without the prospect of compensation. Neither is it just that they should; nor is it true, in general, that they do. Every man who rises beyond the level of mediocrity, will be adequately paid—he receives his compensation from the wealth that already exists. The measure of the tax will be swallowed up in the dimensions of the fee, and the producer, after all, must pay! What now has become of *the tax on professional income*? Gentlemen of that most ancient and honorable calling of agriculture,—Gentlemen of Adams' vocation—your taxes are as old as your calling, and will last as long as the earth. Land cannot dodge the tax-collector—and whenever you hear the

music, it is as well to dance, for be assured of this, it is *you* who pay the piper !

The agricultural class then, is the productive class, and is not only directly taxed beyond other interests, but pays indirectly a part of that tax which purports on its face to be levied upon a different class in the community. The portion which even purports to be levied on any other than the agricultural interest, is so small, as scarcely to deserve consideration—for if we refer to our own Parish, for a standard, and assume \$7000 per annum as the amount of its tax, we shall find that \$228 only of that sum is paid by the tax on stock in trade, and \$52 by the tax on professional income! \$340 only, purporting to be paid by other interests, against \$6660 avowedly assessed on the planting interest! If we adopt the same standard, in judging of the distribution of taxes in the neighboring parishes, we shall have \$1360 only assessed on other interests, out of \$28,000 assessed annually on the four parishes of Beaufort District! What has the parish, or the district, drawn back from this fund, in support of the interest that paid it? Nothing! Take a series of years—to what an immense sum do these taxes amount? On what wild projects—on what ill-considered schemes of miscalled improvement have these sums been squandered? What sums have the political managers suffered to come back to us who paid them? What to the agricultural interest in general? Where are the *schools*, the *professorships*, the *experimental farms*, they have established? If any particular interest has a right to the use of the surplus in the treasury, after the ordinary charges of government have been defrayed, it is the agricultural interest—and can any man shew me what the Legislature have ever done for that interest? Why they bought out for the sum of \$50,000, the patent-right of Whitney to his saw-gin, and surrendered the use to the citizens of the State, without tax or charge. That is all! Pause a moment, to consider the surprising results of that invention! Observe the noble ships that plough the bosom of the Atlantic, engaged in the annual transportation of one million bales of cotton—estimate the capital invested in those ships, and number the thousands of mariners who are maintained out of the profits of the trade. Look at the new value *created* in this country by the *growth*—and in England, France, Germany, and in other sections of our own country,

by the *manufacture* of the raw material! Look at the importance into which the Southern country has grown by this culture—at the community of interests sprung up between ourselves, as producers and consumers, and other nations as manufacturers, and venders of the manufactured article—consider the capital invested in, and the multitudes maintained by, the various processes of fabrication—examine carefully the strength of these links, created by mutual wants and interests, and you will perceive that they are so strong, that the jealousies of years have vanished before their presence—that they promise to be so enduring, that wars (with all their attendant glories, the scourge of nations and worst foe to improvement) will be rendered unfrequent beyond all former precedent. Look at these splendid results, owing to the simple machinery, which, by separating the fibre of the cotton from the seed, has rendered it an object of commercial demand—and think, how gratifying would have been the retrospect, if by any bounty, or premium, or encouragement offered by us, we had called forth this splendid invention, and might claim all these magnificent results as our own! But we have no such merit—the invention was not with us, but with a neighboring State: it was made without aid from us, or others, and all that we have done is, to purchase from citizens the right to use the invention, untaxed. Gentlemen, the great agricultural interest, which has so bountifully supplied the wants of the State, has received no favors in return; it has ever been a persecuted interest. The clause of the patrol law, which regulated the employment of overseers, was at once unjust to the overseer, vexations to the planter, and at war with the best established maxims of political economy. It is the distinguishing trait of free governments, to suffer private interests to regulate themselves—to interfere with no government regulations in pursuits that individual industry can more successfully manage for itself. This is the *rule*, and the *exception* is, when the private interest is so managed as plainly to interfere with the public good. Then the government is bound to interpose. The injury assumed to exist, in the case before us, was this; “that the planters, by refusing to employ overseers on their plantations, made the execution of patrol duty, as prescribed by law, impracticable in certain sections of country.” The fact was so, that the duty as prescribed,

was unexecuted. But the non-execution was clearly the influence of climate, not of disinclination on the part of the planters to perform their civil duties. Why the climate should have been taxed for this, not the planter! The remedial law enjoined, that every owner of a settled plantation, having ten working hands, should provide an able bodied white man, who should be resident thereon, to perform patrol duty; in failure of which, he was liable to heavy fines, half of which went to the informer! Now it is evident to every man of common sense, that the law was incapable of complete execution, inasmuch as it was impossible to find a reputable man in the sickliest parts of our country, who will expose his life for the paltry stipend which so small an interest can afford to pay. The planter who owned such small-interest, was thus exposed to the malice or cupidity of the informer, who had only to swear to the fact which could not be concealed, to entitle himself to half the penalty he could impose on the planter. And this law was therefore an oppression. Had it applied only to the owners of large estates, it had been more equitable, for the public safety demands that large collections of negroes should not be left uncontrolled by the presence of a white man. Had it enacted, for the regulation of smaller estates, the superintendence of a white man residing in the vicinity, but not necessarily resident on the estate, it had stood on a better foundation of policy and justice. Let us analyze this law: ten hands must employ an overseer; who must live on the plantation, and who is cut off by the law from all other business: he cannot manage a neighbor's planting interest, for if he does, he leaves his employer or his neighbor liable to the fine for non-residency. He has one hundred dollars then for a year's service; for exposure to hardship, discomfort and sickness: one hundred dollars to pay his doctor's bill, and buy his supplies: and with these risks, he cannot better himself, for the law shuts him out from other business, by confining him to the plantation on which he resides. What humanity! What consideration for the poor! The law chains him down to penury and sickness, and forbids him to rise, by denying him the means to extend his range of service, and consequently of compensation. Now look at the effect, on the proprietor of this small planting interest of ten working hands. Supposing his ten hands to yield an average crop of one thousand dol

lars gross ; you pay away one hundred to the overseer, and subtract another hundred, as the loss from withdrawing one hand from field-work to wait upon the overseer. Two hundred dollars a year is the tax which this law levies upon the small proprietor of ten hands, who complies with its requirements. Twenty per cent. on the gross income of the planter, in addition to his customary taxes ! Nor was this law less injurious to a most valuable class of citizens—the overseers of a higher grade, commonly known as managers. What intelligent planter does not know, that it is more for his interest, that two or more adjoining plantations should be committed to the charge of a man of intelligence and character, than that they should be separated and thrown into the hands of men destitute of both—who would become the associates of the negroes, instead of controlling them ; and whose example would utterly corrupt them. Yet this class of citizens were confined by the law to the management of one plantation,—their sphere of service was narrowed, their profits reduced, and the comforts they might reasonably enjoy, and which would enable them to oppose themselves with better success to the dangers of the climate—legislated out of their grasp. And this law, Gentlemen, so vexatious and unjust to the planting interest, in all its branches, was imposed on that interest by legislators, who were indebted to that very interest for ninety out of every hundred dollars, which they received in payment of their legislative service. Nor was it until after the lapse of fifteen years, and after repeated petition and remonstrance, that this obnoxious law could be modified. How shall we secure ourselves against such injurious legislation ? I answer, by sending a large proportion of intelligent planters to the Legislature. It is not a position they covet—they find themselves unable to cope in debate, with lawyers not more intelligent than themselves—they find the interest so important in their eyes *at home*, dwindled *there*, into a very moderate compass, and having but a slender hold on the public consideration. They might find a bill to promote the agricultural interest, laid on the table, to debate the provisions of the fee-bill, or to change the sitting of the courts. They might find the most vital question of internal police postponed, to consider some splendid constitutional abstraction, which might yet, in the sequel, be observed to have a practical bearing on the elevation or

downfall of some prominent political aspirant. They might observe the sudden swaying to and fro, of the political tides; now rushing towards one barrier, and now with unexpected recoil, dashing against its opposite, swallowing up men and hosts in their reflux; but they would gaze with unenlightened wonder, without perceiving the influence that controlled the movement, or tracing it to the attraction of some powerful planet, that was revolving in another part of the system! The influence of the government is not with them, and the dignities and emoluments of the government, are not for them. Judgeships, Commissionerships, Solicitorships, are beyond the reach of their hopes—beyond the pale of their ambition! These are reasons, why planters should not desire to go to the Legislature, but none, why we should not desire to send them! A planter myself, I trust I may not in these remarks, be thought unjust to the gentlemen of the legal profession. They do govern the country, and they must govern it. Talent for debate, ripened as it must be by the nature of their pursuits, has conferred, and ever will confer, power in free governments. I admire their masculine and well disciplined intellect, and their high moral tone. From the days of the Rutledge's, to the present time, the front rank of this distinguished profession has been filled with men, of whom a Carolinian should be justly proud. But, Gentlemen, *their aims and ours, may not always be the same*; and we shall forget the *reason*, the *principle* of the representative form, if we leave them unchecked by a strong representation of the agricultural interest. Experience has taught us, that we should protect ourselves against injustice, and against neglect.

The most casual glance may satisfy the most superficial observer, that agriculture is all and all with us. Our position makes it necessarily our leading pursuit. We have an element of success beyond the reach of all other inhabitants of the temperate zone, for we cultivate the tropical plants, through an agency which they are unable or unwilling to employ. The command of black cultivators, in a region which would prove fatal to white, and in labors too severe for the Indian constitution, was the secret of our former prosperity. It is true we have no longer a monopoly of the cotton market. The Western States, with their richer lands, and greater product from a smaller investment, have competed successfully with us. Yet the

evil has not come without its qualification of good. If our profits have been diminished by their success, our security has been increased. The domestic institution, that foreign hostility, or fanaticism, might have assailed with hope of success, while confined to a narrow strip along the Atlantic, has been established beyond the waters of the Mississippi, throughout territories so ample and of such vast resources, that we may laugh to scorn the impotent rage of the abolitionist. It will stand, by the will of the people interested in upholding it: or if it be modified, it will be according to our own ideas of expediency or right, unswayed by the suggestions of others, too remote to observe with accuracy, and too much prejudiced to judge with impartiality. It is time for the fanatic to understand, (if understanding be indeed vouchsafed him) that by no efforts can he hope to destroy a system, that the necessities of the country have established, and that the interest and the pride of the country will sustain. He may irritate, alienate, wear away the kindly feeling of brotherhood—he may endanger, nay, destroy the Union—an event that every good man must deeply deplore—but destroy the institution, *he never can!* United or disunited, we cling to it, and maintain it. As a Carolinian, I would sooner abandon the soil, and surrender it a second time to the savage and the beasts of prey, than surrender the right to employ African slave labor in its cultivation, and thus leave it as a gaping sepulchre for the white laborer, who in the vain effort to acclimate himself, must expose himself to the fatal influence of our malaria. No region in the world, lying under our parallel, at our elevation above the sea, and cultivating our staples, is, or ever can be, cultivated by white laborers.

That we may properly estimate the extent of our obligations to our State government, for the protection of agriculture, it may be well to consider what other governments have done for its benefit. Under the monarchical systems of Denmark, Sweden, and in the States of the old Germanic Empire, schools of agriculture were established more than fifty years ago. A Board of Agriculture was organized in England, and their celebrated system of corn laws, was but a bounty on agriculture. The heavy taxation of England falls chiefly on the landholder, and to enable him to pay his dues to government, he is assured of a fair price for his grain, by a prohibition of import, except the price exceeds a certain fixed standard. In one aspect, it were better that the prohibition were removed—for the high price of grain, enhancing the cost of labor, enhances likewise the price of manufactures, and puts British industry at a disadvantage in the competition of nations. But if the tax on the landholder be indispensable, the policy which enables him to meet the demands of his country, is justified by the plea of expediency. I quote the corn laws, as evidencing the consideration in which England holds the agricultural interest, and not as intending to give them unqualified approbation. In various countries, geological surveys have been made at government expense, and the aptitudes of the soil for particular objects of culture, ascertained for the farmer, without his incurring the loss of unsuccessful experiment. Yet we have done nothing of all this. Other States of our confederacy have stepped forward to encourage their agriculture: Connecticut pays a bounty for the raising of mulberry trees, and 50 cts. per lb. in addition on all silk reeled. Maine pays 5 cts. per lb. on the cocoons produced. Vermont 10 cts. per lb. on the cocoons. New-Jersey 15 cts. per lb. on the cocoons. Massachusetts pays \$2 per lb. on all silk grown, reeled and thrown; and 3 cts. per lb. bounty on all sugar produced from beets. Pennsylvania pays a bounty on wheat. Where are the bounties or encouragements

which our State has offered to her citizens? It had been well, if our legislators, while commendably engaged in checking Congressional encroachments, had not forgotten to exercise the powers that exclusively belong to themselves, in the improvement of State police, and the protection of State interests!

I submit to your consideration, Gentleman, a plan for the improvement of agriculture.

I propose, 1st. That we should mold our free schools, into primary schools of agriculture: that a simple elementary work, embodying the principles of agriculture, be prepared by authority of the State, prescribed as a standard book in all free schools, and constitute a regular part of the instruction. Further, that it be made incumbent on the teachers, throughout the country districts, to give their pupils practical instruction in the art.

2dly. That a professorship be endowed and established at Columbia, on which shall devolve the duty of teaching the higher and more difficult branches of agricultural science; to which should be attached an experimental farm, to be cultivated at the public expense, under the eye and direction of the Professor, and for the practical instruction of the student.

There can be no objection to this project, arising from the want of power in the State—the Free Schools, and South-Carolina College, are both its creatures, and it can modify, what it has the power to destroy. The only question will be, as to the expediency: and on this point I would suggest, that the open patronage of agriculture by the State, would go far to remove the prejudice that unhappily prevails in many parts of our Southern country, against the manual or mechanical operations of husbandry. To handle a hoe or guide a plough, is held a degradation to a white man. This is a silly prejudice, it is true; yet it prevails, and grows doubtless out of the fact, that in the portions of our country subject to malaria, the labors of cultivation are performed exclusively by slaves: and hence in these sections, from the influence of the feeling I have stated, you would find it difficult to engage a white man, even when the malaria had ceased, to perform actual field work. The injunction to study the *art* in free schools, and to superadd the *partice*, will go far to uproot this prejudice—give a taste for field labors, as well as skill in their performance—and rear up among us a race of men, who will beneficially for themselves as well as the planting interest generally, fill the place of overseers. It will teach our youth, that industry is honorable, and that the pursuit that the State has publicly encouraged, is no longer unworthy of its citizens.

In relation to the proposed professorship, the purpose would be, to engraft on our principal literary institution, the theory and practice of what is now not merely an important art, but a most difficult and comprehensive science. To draw public attention to its claims, by elevating it into the same rank with the affiliated branches of Chemistry and Mechanics, and with all experimental philosophy—to imbue those who are educated at our institution, not only with those studies, which are every where the object of liberal education, but with those which are of peculiar and especial value to ourselves. For while to no man, of what calling or profession soever, will the knowledge thus gained be superfluous—to the greater portion of students who eventually become interested in planting operations, they will prove of abiding utility, furnishing a fund from which they may ever after draw, for their own profit, and the public good. Such are the results that may spring from the endowment of the professorships, and the study of the principles:

but when we dwell on the lights which would pour in upon us from an experimental farm, scientifically managed, where all experiments would be made with all varieties of staples, assisted with all varieties of manure, and by all modes of culture, and recollect that the results would be faithfully collected, and published for the instruction of the people—the sphere of expected good is vastly enlarged. It must not be overlooked, that it will be the bounden duty of the conductors of this experimental farm, not only to attempt improved modes of culture in staples already known, but to test the aptitudes of our soil and climate for the production of such tropical plants not yet climatized, as may be valuable for food or manufacture. Private enterprise may occasionally suffice—to that we are in fact indebted for the introduction of our most valuable staples. But this public institution will be better qualified to succeed from its character of permanency, and the sufficiency of its moneyed means. This is no trifling consideration. What should we have been, if we had cultivated none but the staples common to the temperate zone? What has made us what we are? First, *tobacco*, a source of profitable culture in its day, now abandoned for more profitable staples—then *indigo*, which has followed the fate of tobacco—then *rice* and *cotton*, which continue our first staples, and the first staples of the world! all of them *tropical plants*! all introduced from abroad! Is there nothing left in store for us? Have we already exhausted the ample treasury of nature? In thinking so, we should decide against experience, as well as probability. But granting that we already have for our rich lands, high and low, the best staples that can be found—are staples not wanted for our pine barrens and poorer soils? The zeal and enthusiasm of Doctor Perrine, have already engaged him in the attempt to naturalize various tropical plants in Southern Florida. “I have forwarded to Southern Florida, (says he in a communication to the Editor of the Southern Agriculturist) many species of valuable vegetables, which yield saccharine roots, delicious fruits, healthy beverages, precious oils, permanent colors, grateful odors, narcotic leaves, capsular fibres, cortical fibres, and foliaceous fibres.” But the naturalization of these plants in Southern Florida, is a different thing from naturalizing them here—and if our experimental farm should succeed in naturalizing a single plant named by Doctor Perrine, the “*Agave Sisilana*,” or Sisal Hemp, a plant yielding a fibre superior to flax or hemp, and growing luxuriantly in the poorest pine barrens—if it could achieve this single triumph, it would confer a lasting benefit upon the country.

But how, if these recommendations meet your approval, shall we carry them into effect? The members of the great agricultural body, have been ever slow to combine: they lack concert, more than other classes. From the days of Sir Robert Walpole to the present time, they have patiently submitted their fleeces to the shearer. They have been men of great note at the receiving offices, but mere pigmies at the disbursing! If they would lift themselves into the consideration to which they are entitled, they must rouse themselves—they must combine their efforts—they must interest the Agricultural Societies throughout the State in carrying out their plans—they must enforce them in the pages of the Southern Agriculturist, and in the public journals, and thus enlighten public opinion as to the justice and reasonableness of their claims. One thing more—they must make it the interest of their representatives to support their plans in the Legislature, by making it the condition on which they will support them!

PART II.

SELECTIONS.

Propagation of Fibrous-Leaved Plants.

[Continued from page 216.]

BROMELIA PITA.

Extract of a letter to the Secretary of the Navy, dated Campeachy
November 10, 1834.

"The specimens of Pita, in their imperfectly-cleaned condition, will suggest the special uses which may be made of them after perfect dressing. It is, indeed, passing strange that an article which has been propagated and prepared, from time immemorial to the present date, on the southern border of the Mexican sea, should not yet have attracted sufficient attention, either in Mexico or other countries, to ascertain the species of the plant, or its habits of growth.

"In the statistics of Vera Cruz, published in Jalapa in 1831, it is stated that in 1830, there were exported from Goazacoalcos, for that port alone, 942 bales of Pita, of 200 pounds each, or 188,600 pounds. Although the poor Indian cultivator, or propagator, often receives only 6½ to 12½ cents a pound, yet, in Campeachy, whole cargoes are sold at 30 to 37½ cents a pound. The same statistical compilation states that in 1830, there were in the department of Acayucan 1,231 Pita-patches, around seven villages, and that the propagation of the plants, and the preparation of the fibres, were augmenting every year; while the cultivation of cotton, in this the finest country in the world for its perennial production, was declined to the lowest degree. To the subscriber, this voluntary transfer of the labor of indolent Indians from Cotton to Pita, is the strongest possible evidence in favor of the superior productiveness of the latter, with a given amount of labor. The cultivation, or rather propagation, of the *Istle*, can be effected more readily than the propagation of the *Henequen*, in Florida, as the latter requires that the land should be entirely cleared, and the former is content to occupy the place of the undergrowth in forests of enormous trees. Samuel Baldwin, a rugged Pennsylvanian, who arrived at Goazacoalcos in 1825, and who brought cargoes of *Pita* to Campeachy, gave me the following information relative to the *Istle*, which has been confirmed by other residents of Goazacoalcos."*

*GOAZACOALCOS, April 1, 1832.

DEAR SIR: I have taken all the pains that I could to learn the manner of cultivating the Pita of this place. The Indians hunt for a thick wood of large timber, and cut that small growth of timber down and burn it; they then plant

Extract of a letter to the Secretary of State, dated Campeachy, November 23, 1834.

"As the natives never receive any article in return but silver, and as they never spend any money they receive, (their cloths being made by their women, and their intoxication being effected by the *chicha*, fermented from their own maize,) it is calculated that since the first notice of the exportation of these fibres, their predecessors must have buried, of their value alone, a total amount of 2,825,000 dollars, which have never been of any service to their ancestors nor themselves, and may never be of any utility to their posterity or the world. From the abundant data already communicated by the subscriber, it may be calculated that foliaceous fibres of the Henequen and Istle alone may be produced in the barren sands and in the idle woods of the South, much more profitably than the cortical fibres of the hemp and flax can be cultivated in the fertile fields of the West—than even the capsular fibres of cotton, in the rich alluvions of the Southwest. If South Carolina will even cultivate her indigenous *Yucca filamentosa*, he will promise her, with the rotary scrapers of Perrine, to separate foliaceous fibres from its fresh green leaves; a gift as favorable for her agricultural prosperity as were the rotary pickers of Whitney to separate capsular fibres from their ripe dry seeds.

"N. B.—The native names of the forest Pine-apple plants are written both *Istle* and *Ixtla*: the names of the fibres are written either *Pita*, or *Pitafoja*."

the small plants about six feet distant from each other, and in twelve months they cut it to rasp. If it is not cut for two or three years it makes no difference on the contrary it is better. When the Pita is young, they cut it, and make very fine white fibres. When three years old, the Pita is long and coarser. There are three different kinds of Pita: one kind has many thorns, the second kind has but few thorns, and the third kind has none at all. I believe the cause of its not having thorns, is owing to the cultivation. Their manner of cultivating it is to cut the weeds once in twelve months. The plant springs from a running root of the old plant. After the ground is planted one year; it becomes as thick as a wheat-field in appearance, so that it is impossible to walk through it without cutting a road. It has a large blossom, like the Pine-Apple, but close to the ground, and has a small seed. The Indians tell me it takes three years to grow, and they have promised me to get some seed for you. Under the flower there grows a small bunch of *pits*; these the Indians make use of as a drink. They bruise them, then put them in water, and it makes a fine drink, fresh and tartish to the taste. The Indians have about five acres to a family, which gives them work for the year. The Pita that one man rasps, is four pounds per day. A gentleman here tells me that he rents his Pita gardens to the Indians for two bales per year. He has 500 acres of Pita to let to the Indians. He gets about \$50 per year for his Pita, [in each garden.] His name is Lusana de Toris. I came to Goazacoalcos in 1825; the Pita then brought a fine price, three bits per pound and quick sale; now it is one bit per pound and dull sale. I think in one year more it will be sold for 64 cents per pound. All the thread for sewing here is made by hand by the Indians. I myself made a rope of the Pita for the use of my saw mill, that proved much stronger than one of hemp of the same size, and lasted longer. I have no more to say on the Pita.

I remain your most affectionate friend,

SAMUEL BALDWIN.

Mr. HENRY PERRINE.

It is my opinion, if the Pita was cultivated by people that know how to take hold of work, it could be sold for one cent per pound, and the laborers would make a good living at that. The laborer (of cultivation) is much less than flax or hemp, for there is no use of cattle, ploughs, or fences. It can be planted in the woods apparently wild.

SAMUEL BALDWIN."

OTHER FIBROUS-LEAVED SPECIES OF BROMELIA.

Besides the common Pine-apple, (*Bromelia ananas*.) other species have edible fruits; but, as far as my observation extends, the more valuable they are for edible fruit, the less valuable are they for their fibrous leaves. The Pinuela of Yucatan, much prized for its clusters of very acid fruit, has no valuable fibres in its leaves. It nevertheless serves very well for hedges. The Penguin is very common in Jamaica, in most of the dry savannahs and on the rocky hills, where it is used for fencing pasture lands, on account of its prickly leaves. "These, stripped of their pulp, soaked in water, and beaten with a wooden mallet, yield a strong thread, which is twisted into ropes and whips, and manufactured into a good cloth." The juice of the fruit of both species makes a cooling drink for fevers, extremely diuretic and vermifuge. In Brazil, three species of *Bromelia* are prized for the valuable fibres contained in their leaves, whose provincial names are *Grawatha*, *Caroa*, and *Gruata de Rede*. Dr. Arrude gives the botanical names for the last two, *B. variegata* and *B. sageria*. The former is found in great abundance in the Sertoens de Paraiba, and of the northern provinces. The fibres of the leaves are of two kinds: from one, a very strong cordage is made; from the other, fishing-nets and a very coarse cloth are manufactured. The latter is confined to the maritime parts of Pernambuco and Paraiba. The leaves are from six to nine feet long. The foliaceous fibres are so very strong, and at the same time so very fine, that cables are made of them much superior to those of Europe in strength and elasticity, while these fibres are equally well adapted for sail-cloth, or for stockings.

The late Mr. E. Roberts, our ministerial agent to the Eastern hemisphere, while at Manilla, speaks of a manufacture as fine as cobweb muslin, used by the natives for ornamental shirting, and which he declares to be the most beautiful fabric in the world. He calls this fine web by the name of Pina, which is simply the Spanish word for Pine apple, and was doubtless intended solely as an adjective adjunct, to denote the plant from whose leaves the fibres were obtained. As very fine foliaceous fibres are obtainable from the thin, dry, long leaves of many species of true *Bromelias*, or brethren to the edible Pine-apple, they are probably converted, in the East Indies, to the manufacture of those fine glossy substitutes for linen and muslin, called Grass-cloth. Fine foliaceous fibres, in general, are called Grass-flax, or Grass-silk, Tropical Flax, Vegetable Silk, &c. As a general remark, these fibres are best obtained by the mechanical process of simple scraping only of the green living leaves. All maceration, rotting, or decomposition, however useful for the reticulated structure of the barks of common flax and hemp, are injurious to the strength of the parallel longitudinal fibres of living leaves of endogenous plants. There is no doubt in the mind of the subscriber, that all the valuable species of *Bromelia* can be profitably propagated on even the natural, uncleared, arid surfaces of tropical Florida. By the letter of J. Dubose, it will be seen that the *Bromelia Pita* of Goazacealcos, sent in 1833, continues propagating itself in the vicinity of Cape Florida.

HENRY PERRINE.

WASHINGTON, Feb. 10, 1838.

LILY TRIBE.

Phormium Tenax: *Flax Lily of New Zealand*.—Ever since the first voyage of Captain Cook, all voyagers have concurred in testifying to the immense utility of this plant among the natives of the countries where it spontaneously grows. During the same period it has occupied the anxious attention of all intelligent men, who with the eyes of patriotic statesmen contemplate the important changes which will be effected by this single plant in the agriculture, manufactures, and commerce of all civilized nations. Until recently, at least, all attempts to cultivate this flax lily in the open air of England have failed. At Charleston, South-Carolina, in August last, I found it in a vigorous condition, and was informed that it has flourished several years in the open air. In Paris its vegetation is not vigorous and it is sometimes damaged or killed by rigorous winters; but in all the southern departments of France it vegetates vigorously, and never suffers from cold. Although hitherto propagated by suckers or by division alone, all southern France is becoming covered with the progeny of a single plant introduced about 40 years ago. In 1791, Labillardiere started as a botanist in the expedition of d'Entrecasteau, designed to seek the unfortunate LaPeyrouse, and returned to France in 1798, with several plants of the New Zealand Flax Lily, but when in sight of the coast, all his collections were captured by the British. Nevertheless, shortly afterwards, Acton, the director of the garden at Kew, remitted a single shoot to Thonin at the Garden of Plants in Paris. As Thonin was duly impressed with a deep sense of the great importance of this single plant, he distributed all its progeny, as fast as they appeared, to many different portions of France; and for his persevering labor alone he should have a monument erected to his memory. It is stated that Marshal Clausel has introduced the culture of the *Phormium* into Algiers, and it may be confidently predicted, that within a few years more, France may extract foliaceous fibres from her acclimated *Phormium* and her naturalized Agaves as superior substitutes for flax and hemp, both for home consumption and foreign exportation. The strength of the fibre of the Flax Lily compared with that of common flax and hemp has been ascertained to be as follows: New Zealand flax 23½; common hemp 16½; and common flax 11½. The relative strength of Silk itself is expressed by the No. 24. The natives of New Zealand obtain the foliaceous fibres from the green leaves of the Flax Lily by simple scraping only, with muscle-shells and their nails; yet this simple process obtains fibres both stronger and handsomer than any more complicated process devised by the Europeans.

Since 1827 several English mechanics have spent much capital and power in attempts to make use of this plant; but it is said they did not succeed in ridding it of the resinous matter it distills so as to soften it enough for easy weaving. But it is now ascertained by the French papers, that a Monsieur Leonard has just regulated and brought to perfection the attempts heretofore stationary among the English. He has established at Port Remy a large manufactory of the *Phormium tenax* which then employed more than one thousand workmen, and it was anticipated that before many months the number of workmen would be necessarily increased to 3000 persons.

Before being brought to a weaving state, this plant goes through seven operations, which are so little costly, that all included, even to the combing, does not amount to six francs the quintal, (i. e. \$1 20

per 100 lbs.) It is reasonably contended that this plant will be to France more important for manufactures than cotton is to England. Without entering into further details, the subscriber wishes to attract public attention that the *Phormium tenax* can be profitably propagated on the worst soils of Florida and of all our Southern States.

There are five species of *Yucca* indigenous to the worst soils of our Southern States from the Potomac to the Mississippi; and there are two species of *Yucca* now acclimated in several Northern States. The botanical names of the five Southern species, are *Yucca filamentosa*, *Y. gloriosa*, *Y. aloifolia*, *Y. angustifolia*, and *Y. recurvifolia*. The common names and synonyms for the *Y. filamentosa*, are, Bears-grass, Silk-grass, Eves-thread, and Everlasting. The very filaments on the margins of its leaves are nature's signs of the fibrous treasure within them. As these leaves are thin and flexible, they are used entire for straps and strings, and when twisted and tied together they serve for ropes and even cables of small boats. Elliot, in his Botany of South-Carolina, says: "It appears to possess the strongest fibres of any vegetable whatever, and if it can be raised with facility may form a valuable article in domestic economy." The leaves of the *Y. gloriosa* are stoutest and fleshier, and abound in strong fibres; indeed, it is a dwarf representation of one species of the Sisal Hemp plant. The *Y. aloifolia* differs principally in the margins of the leaves being rough or sawed, while the edges of the leaves of the *Gloriosa* are smooth. Both however have a thorn at the point of their leaves; and both are frequently known under the common names of "Adam's needle, Spanish bayonet, *Petre*, and Palmetto."

In the report No. 454. of the Committee on Agriculture, in April, 1832. at page 11, is an account, by Judge H. Breckenridge, of Pensacola, of a fibrous-leaved plant resembling the Bouquet Palmetto, said to be the same as the *Pita* cultivated in Campeachy. He says "it grows in great abundance even in the poor sandy pine lands; it can be easily transplanted, will bear to be cut once a year, and will in that period attain the former size or even greater, being perennial, a plantation once made will last for years; a thousand plants to an acre would produce one pound each; and that as it requires but few hands it must afford immense profits to those who first engage in its culture." As Judge B. is doubtless speaking of an indigenous *Yucca*, accurate trials should be made of the relative value of all the indigenous species, and exotic species should also be included.

The *Yucca acaulis* of Cumana has so much the aspect and habit of an Agave, that it is there called Maguey de Cocuy or Cocniza, and from its leaves are doubtless obtained the celebrated fibres of Colombia whose name is written Coquise by foreigners. Lieutenant Bache says that there the name *Pita* is given to the fibres of a tree called Marichi, that these fibres are 10 to 12 feet long, and finer and more silky than those of the Agave. Under the head of Palms it will be seen that this fibre is likely obtained from the *Mauritia flexuosa*. Under the names *Yucca Boscii* vel *Agave filamentosa*, there is now in French gardens a fibrous-leaved plant which merits introduction into the United States.

Should the Committee on Agriculture determine to have lithographed the drawings of fibrous-leaved plants which should accompany their report, their appearance for illustration will compensate the brevity of detail to which I am forcibly limited.

It is nevertheless trusted that enough has been said to excite effective encouragement to the propagation of fibrous-leaved plants on the poorest soils of all the United States, as far north as they will profitably grow.

BANANA TRIBE.

Our botanists tell us that the *leaves* of species of Banana or Plantain yield a kind of flax, of which the finest muslins are made. Our commercial and geographical books tell us that the fibres called Manilla hemp are obtained from the *bark* of the same species of wild Banana which fill extensive forests in the marshy Philippines. A naval officer has asserted that the Manilla hemp is obtained from the *bark* of a species of Palm. If due attention has been paid to the introductory facts relative to the Banana tribe, and the Palm tribe, it will be seen that these assertions are absurd. Palms have not any proper bark; Bananas have not any proper stem; and the structure of the leaves of the Banana will show that they cannot yield fibres valuable either for length, strength, or quantity. The petioles of the Banana leaves, which compose the column called the Banana stalk, do, however, contain parallel and longitudinal fibres; yet in most species of the fruit-maturing species these fibres are not valuable for thread or cordage. Even in these cases, nevertheless, the foot-stalks may be rendered valuable for simple manufactures of matting or bailing, as exhibited in the envelopes of cloves from the East Indies.

I have exhibited to the Committee of Agriculture one petiole of the common Banana, which foot-stalk of a leaf measures 10½ feet long, by 4 inches wide. Hence the importance of the fact that a small species of Banana is now acclimated in Louisiana; that it can be spread by seed, as well as by suckers, along the marshy borders of the Mississippi. These seeds the committee have seen; they are still on their table; a portion have already been distributed, and the remainder are intended for general distribution by the subscriber. Nevertheless the fibres of the petiole of even the common Bananas and Plantain known in the West Indies, have been thought worthy of legislative encouragement in Jamaica: one hundred pounds premium being offered by the Assembly for the best specimen of this petiolar hemp in each county. One premium was gained by Dr. Stewart West, for the best specimen produced in the country of Surry about thirty years ago. He also gave the form of a very simple and cheap machine, by which he effected the separation of the cellular substance from the fibres. As emancipation deprives the whites of a command of labor for their ancient staples, it is highly probable that the assembly will soon encourage again the production of petiolar hemp, from certain species of the Banana tribe; especially as the people are actually introducing, from Carthage, the fibrous fleshy-leaved plant called Pita de Guataca. About fifteen years ago, the attention of the Horticultural and Agricultural Society of the East Indies was attracted towards the production and preparation of Banana hemp. Several communications were read to the society. All parties spoke highly of the topic; but the subscriber has not had the means to ascertain what progress has since been made. About six years ago, a paper appeared in a French journal, entitled "Notice concerning a new Textile material, which can be profitably produced in the colony of Algiers," read before the Royal and Central Society of Agriculture, by Jerome Saint Hilaire. In this paper Saint Hilaire

gives an imperfect account of a wild Banana of Manilla, called the Abaea, and recommends the propagation, in general, of the species of Banana, for the fibrous materials afforded by the petiolar lamina of their stalks. It appears that public attention, in Paris, had been attracted by the manufacture of stuffs very remarkable for their splendor, being as brilliant as those of silk. The great success of the first manufacture of an unknown staple induced rivals to engage in the same business; and, by the lawsuit which ensued, the secret war made public.

The most able Botanists appointed to examine these new fibres were greatly puzzled in their attempts to ascertain the kind of plant and the part of plant, from which they were obtained. At first it was supposed that they were the foliaceous fibres of the leaves of the *Phormium Tenax* or Flax Lily of New Zealand, even then extensively multiplied in France. As, however, these glossy-white fibres, under the name of Abaca, were proved to be imported from the East Indies, inquiries were made of Mons. Perrotte, the botanical agricultural voyager of the French Government, to whom Europe and America are indebted for the importation of the *Morus multicaulis* from Manilla, and to his letter of the same period, is the world indebted for the most exact knowledge of the fibrous Banana of the Philippines that ever has been published. During four months stay at Manilla and its vicinity, he had opportunities to know exactly the plant itself; the simple manner of extracting its fibres; and the usages for which the fibres were generally employed. He, furthermore, brought with him to the Garden of the Museum in Paris, several living individuals of this interesting Banana; and, in 1821, he published a catalogue of all the plants introduced by him, including, at page 42, this valuable plant, under the name of *Musa abaca*. To extract the fibres, he says that the natives employ three different processes:

1st. Maceration of the stalks or petioles in stagnant water.

2d. Their extension on a humid soil, under the shade of large trees, and turning them occasionally during several days, until their cellular substance be decomposed or destroyed.

3d. The mechanical crushing or bruising of the petiolar stalk or lamina until the utricles be destroyed, the juices expelled, and there remains solely a mass of fibres, which can be cleaned by washing.

Mons. Perrottet, however, has discovered one fact relative to the extraction of the petio foliaceous fibres which is applicable to all Endogenous plants whose leaves or petioles yield valuable fibres. That important fact is, that maceration, rotting, or decomposition, of the cellular substances of the leaves or of the petioles, does really weaken or destroy the *parallel longitudinal fibres*; and that hence speedy mechanical separation or scraping is the simplest and the only mode to obtain foliaceous or petio-foliaceous fibres of the greatest strength, whiteness, and brilliancy. The fibres called Manilla hemp, in common with the fibres called Sisal hemp, are stronger, lighter, more durable, and more elastic, than the fibres of common hemp. Until November last, the subscriber was not positively convinced that the long coarse fibres, called Manilla hemp, were obtained from any species of Banana; but some imperfectly dressed fibres, which retained the cuticle of the petiole, and some straps of the petioles themselves, of two different colors, have dissipated his doubts, and he trusts, also, the doubts of the committee.

Our ministerial agent to the East Indies, Mr. Roberts, under the

head of exports from Manilla, spells the name of the fibres in three different ways: Abacia, Abacá, and Avacá; and states that the production and export of the Manilla hemp, has greatly increased in a few past years. The great recommendation of this plant to the subscriber is two-fold: first, that it will propagate itself in the marshes of tropical Florida, and secondly, that its fibrous crop can be obtained within a year from the transplantation of the suckers.

The very fact that this Banaha is propagable by suckers alone, in common with the Agave of Sisal, places the transportation of either beyond the means of individual enterprise, especially as the inhabitants both of the Philippines and Mexico would interpose obstacles to the acquisition of a cargo of living plants by any private foreigner.

PALMS.

The Rev. R. Walsh in his travels through Brazil during 1828-9, discovered the Ticu Palm growing in *marshy spots*. This fibrous-leaved palm, (the *Bactris acanthocarpus*.) the Brazilians are beginning to use as a *substitute for flax and hemp*. "The leaf is *long*, and exceedingly *fibrous*, covered with small spines. When bent in the middle, the ribs of the leaf, which are very brittle, crack and separate; the ends are then drawn down at each side, and leave a series of strong fibres of the best quality behind them, which are very applicable to the purposes of manufacture. The tree is from 15 to 20 feet high, and the stem is as thick as the wrist, divided into joints, with a circle of spines around each. It yields also a cluster of acid fruits on the summit of the stem; each fruit consists of a stone, covered over with a pulp, and enclosed in a purple skin, so that the cluster is very like a bunch of grapes. The fruit is cooling and agreeable in a hot day and is sometimes made into vinegar. The stone exactly resembles a cocoa-nut in miniature, and contains a kernel within it also. It is sold in the streets of Rio, and is called the Cocoa Ticu."

The Gomutus, or black-rope Palm of swampy woods in the East Indies, is asserted to be the most valuable substitute for flax and hemp, discovered by the celebrated Doctor Roxburgh. Under his superintendence, it was extensively propagated in the dominions of the East India company, and its propagation was warmly encouraged by the British Government itself.

The native names of the *Palm itself* are written Anau and Anou; and their names for the *black fibres*, are written iju and ejoo. From these horse-hair like fibres are made the cordage called Black-rope, and Palmtree cordage. "Each tree produces six leaves in the year, and each leaf yields ten and a half ounces of the fibres, which makes the annual produce of each palm nearly four pounds. Some produce full one pound of the fibres in each leaf: They grow from the base of the footstalks of the leaves, and embrace completely the trunk of the tree. The fibres and leaves are easily removed without injuring the tree." Thus says Roxburgh, Trans. Soc. Arts, Lond. vol. 24, p. 152. Crawford says: "It is used for every purpose of cordage in India, domestic and naval; and is *superior in quality, cheapness and durability*, to the cordage manufactured from the fibrous husk of the cocoa-nut." In Ceylon, the fisherman make their lines of *single fibres*, tied to each other until of sufficient length. It also produces much sago, sugar, toddy or wine, and thatch. Botanists differ in their names, some call it *Saguevis Rumphii*; others, *Arenga saccharifera*, and also, *Borassus gomutus*. But the most wonderful and

useful of the fibrous-leaved palms, flourishes in the inundated islands of the Delta of the Oronoco; this is the *Mauritia flexiosa*, whose native name is written three ways, viz: Murichi, Moriche, and Marcihi. Indeed, to form an adequate idea of the astonishing and diversified utility of this Palm, it is necessary to read all the details given by the Padre de Gumilla, in his History of the Oronoco. He truly calls it the tree of life of the Guaruma Indians, as they obtain all the necessities of life from this palm alone. During one-half of the year these islands are covered by the freshets of the river, and during the remaining six months, twice a day by the tides of the sea. The dwellings or villages of these Indians are elevated on platforms made of this palm. Its trunk contains the finest farinaceous matter. Their cordage and clothing are made of its leaves.

To me, the greatest recommendation of these palms, are the facts that the first grows in marshy spots; that the second thrives in swampy woods; and that the third flourishes in the midst of the waters; and that hence they may be all propagated in similar worthless sites of tropical Florida.

H. PERRINE.

WASHINGTON, February 10, 1838.

*Report by J. Buel at the N. Y. Agricultural Convention on
the Necessity and means of improving our Husbandry.*

[FROM THE NEW-YORK CULTIVATOR.]

We cannot be too often reminded of the contrast which exists between good and bad husbandry,—nor too often admonished to search into causes of this difference, and to apply the needful remedies. The difference does not consist alone in a single crop, or a single season: The soil in one case is becoming more and more exhausted of fertility, and losing its intrinsic value, while in the other its relative worth is on the increase, and the difference in product is consequently annually increasing.

We will illustrate our proposition by a comparison between American and Scotch husbandry, now and sixty years ago. Sixty years ago, the agriculture of Scotland, was in a wretchedly low and unproductive condition; while the products of our yet unexhausted soil were abundant. But sixty years ago the spirit of improvement fell upon Scotland, her agricultural society was instituted, and commenced its useful labors, and was soon after greatly aided by the organization of a national board of agriculture; agricultural surveys were made and published of every county—the best practices of every district thus became known to the whole nation—men of fortune and science turned their attention to the encouragement and improvement of this parent art; and the consequence has been, that a wonderful and salutary change has come over the land, fraught with abundance and with blessings. The value of land has in consequence been enhanced three and four fold, and its products have been increased in a proportionate ratio. "In fertile districts," says Sir John Sinclair, "and in propitious seasons, the farmer may confidently expect to reap from 32 to 40 bushels of wheat; from 42 to 50 bushels of barley; from 52 to 64 bushels of oats, and from 28 to 32 bushels of beans, per statute acre. As to green crops, 30 tons of turnips, three tons of clover, and

from 8 to 10 tons of potatoes, per statute acre, may confidently be relied on.—In favorable seasons the crops are still more abundant."

Now, what has been our progress during the last sixty years? Has it not been retrograde in agriculture? We have, to be sure, obtained abundant crops from our rich virgin soils, and when these have become exhausted, under bad management, we have occupied and exhausted others in their turn. But what is the conditions *now* of the lands that were cultivated by our fathers half a century ago? Do *they* produce the average crops which are given above as the products of Scotch husbandry?—under all our favorable circumstances of climate and of civil liberty. Are our crops *half as large*? Nay, are they more than a *third* as large? Do we get from our old districts, an average of more than 10 to 13 bushels of wheat, of 14 to 17 of barley, or of 17 to 21 bushels of oats per acre? At the close of the last, and in the beginning of the present century, the surplus products of northern agriculture were *exported* to an immense amount. Now we *import* the agricultural products of Europe, to avert the evils of famine! The cause of this remarkable difference, in the surplus products of the soil, may be partially owing to unpropitious seasons, but is mainly to be sought for in the neglect of our agriculture—both by the people and the governments. In Europe, the governments, and influential individuals, have bestowed spirited attention upon the improvement of agriculture, as constituting the basis of national prosperity and independence. While with us, improvement in husbandry has been considered a minor concern,—it at least has not received the consideration of the statesmen or the political economist. Party politics, and local or personal schemes of aggrandizement, has so much engrossed the attention of the men who *ought* to lead in these matters, and who *do* lead in every public improvement, that the humble claims of agriculture have failed to attract their notice, or engage their attention, although it constitutes the base which supports the whole superstructure of civilized society. If we would preserve the superstructure, with its embellishments, we must take care to make strong and permanent this foundation. Our farmers, too, seem generally indifferent, or spiritless, in regard to the general improvement of our agriculture, either because they mistake their duty and true interest, or that, under the influence of a strange fatuity, they fear they shall sink as others rise.

We should consider our soil as we do our free institutions—a *patri-
monial trust*—to be handed down, UNIMPAIRED, to posterity; to be used but not abused. Both are more easily impaired than they are restored—both belong, in their pristine vigor and purity, as much to our children, as they do to us. In some of the once populous and fertile districts of the old continent, the fertility of the soil has been recklessly wasted by men, whose dependents have consequently, become poor and wretched, and their country almost virtually a desert. In other portions, where the fertility of the soil has been sedulously preserved for ages, or centuries, the population has continued prosperous, wealthy and happy.

It is undeniably true, that our general system of farming is bad; that in most parts of our country the natural fertility of the soil has been gradually diminishing, and its products becoming less; that the evil is increasing; and, that without a radical reform, we shall, in the north, not only cease to have surplus products to pay for the for-

eign commodities which long habit has rendered necessary to our convenience, but lack a supply of bread stuffs for our own population. To what degrading dependence will this course of things in a few years reduce us—unless prompt and efficient means are adopted to check our down-hill course in the products of agricultural labor!—With the finest country in the world, a population almost entirely agricultural, —exempt from the enormous burthens, as tithes, rents and poor rates, which press like an incumbrance upon the agricultural labor of Europe, —and dependant on foreign supplies for the means of subsistence!!—The idea is humiliating—is alarming—to all who look to the ultimate prosperity and happiness of our country. Our maritime commerce depends upon contingences which we can neither foresee nor control. Venice and Genoa, and Portugal and Spain, have each in turn, had their “days of commercial prosperity”—they successively rose to opulence—to power—and successively sunk, the victims of corruption, into effminacy, vice and despotism. Manufactures too, as we have had abundant cause to know, are but a precarious dependence for national greatness. Commerce and manufactures are the shaft and capital of the social column, of which agriculture constitutes the base; and without this base, they can no more withstand the shocks and revolutions of time, than could the short lived glory of the nations we have named. Great Britain now wields the trident, and the world is made tributary to her work shops. But great as she is in commerce, and in manufactures, these are considered secondary and auxiliary to her agricultural greatness. Land is the basis of her national wealth, —it is the surplus marketable produce of her soil, says Sir John Sinclair, that is the source of all her political power, and of the personal enjoyment of her citizens; and there is no source of domestic industry, or of foreign commerce, he adds, that can in any respect be put in competition with the improved cultivation of her soil. The agriculture of Great Britain employs but two thirds of her population; and yet the surplus products of her soil, suffice to feed and support the other third, and to assist in supplying our deficiencies. Our population is at least five-sixths agricultural; yet during the two last years we have had to import about ten millions worth of bread stuffs to supply our deficiency in this first element of life; and even in the most favorable seasons, the exports of the surplus products of our northern soil, have been merely nominal.

We will state one fact, derived from official documents, which will demonstrate beyond the power of refutation, our down hill course in this great branch of national industry. It is this: the average increase of bread stuffs, passing from our canals to tide waters, from the great grain district of the west—from the Flanders of America,—has amounted to three and three quarters per cent; while our population has increased in the ratio of six per cent per annum! If such has been the deficiency, in our grain growing, new and fertile districts, to meet the wants of our increasing population—how much greater must that deficiency have been in the exhausted soils of old settled districts? Many portions of our country, which once exported grain have, by bad husbandry, become dependent upon the comparatively new settlements, or upon foreign supplies, for this indispensable necessary of life. This remark will apply to almost our entire Atlantic border.—Will any mathematician tell us, how long it will require, according to the disproportionate ratio of increase, between our popu-

lation and our means of subsistence, to reduce us to a state of absolute dependence? or, to a state of national want and famine?

It is apparent, from the examples of improvement which are witnessed in many districts of our country, that we can improve the general condition of our agriculture, if we will adopt a wise and energetic policy. Nay, we have a demonstration of the practicability of doing it, in the now palpable benefits of the law to improve our agriculture, passed in 1819. That law involved an expenditure of 40 or 50,000 dollars, and expired in 1824. It was found fault with by many from political motives, and by more from a spirit of envy, in those who either had not the enterprise or the talent to compete successfully for the rewards which it gave to industry and skill. And besides the law, in some instances, was badly, we may almost say corruptly, executed. Yet under all the disadvantages of want of organization, of inexperience and abuse, has not that expenditure been like manure spread upon our soil? Did not that law excite a laudable emulation among the whole farming community, and bring into action more skill, more industry, and more improvement? Has it not been instrumental in greatly improving our farm stock, our farm implements, and modes of culture? Has it failed to increase the farm products of any one county, of a respectable population, to the amount of the total expenditure? Or, has it failed to return into the treasury, every year the gross amount of that expenditure, in the form of canal tolls upon the increased productions of the soil? We do not put these questions because *we* have any doubts in the matter, but to bring the subject home to the calm and deliberate consideration of those reflecting men whose duty and interest it is to scan, to judge, and to act wisely, upon a question of momentous importance to our country. If these men think with us, that the law of 1819 has amply remunerated the state, for its expenditure, on the increased tolls on our canals, and that it has added millions to the value of our annual agricultural products, they will not hesitate to renew that policy which has been productive of so much public good. The improvements of the last eighteen years might have been respectable without the aid of that law; but it was that which gave a new impetus to improvement. The fairs and exhibitions which it produced, taught our farmers, that there was yet much to learn in their business;—that they could improve, in their farm stock, in their farm implements, in their seeds, and in their modes of culture—and many of them resolutely determined to profit, and did profit, by the lessons of instruction which they then imbibed. And when the spirit of improvement has begun, it is like civil revolution, it seldom retrogrades. One improvement leads to others, as naturally as the active mind, having attained to one branch of knowledge, soars to other and higher branches. Our southern brethren say, we are in advance of them greatly in agricultural improvement. If this is so we owe this distinction in rural improvement to the law that was passed, upon Governor Clinton's recommendation, in 1819.

It requires no science, and very little art, to wear out and exhaust the most fertile soil. The process is simple; take from it all you can, by close cropping, for a few successive years, and return to it nothing in the form of manure, and the work is done, or far advanced. In this business we have shown ourselves to be no mean adepts. But it does require science, and art, and perseverance, and capital, to restore fertility to a soil which has become exhausted. This we have

not yet sufficiently learned; but it should be our next lesson; and the sooner we begin, the sooner shall we profit by it.

Agricultural improvement is slowly developed, at least to superficial observers. It requires years to renovate the fertility of an exhausted soil—to improve the stock of a farm; or to realize the benefits which result from draining, from alternating crops, and from foot culture. We are much in the habit of calculating upon *immediate* gains, without looking to remote and ultimate benefits. We saw not the change, when the law of 1819 was in force, because its benefits were but partially developed. But we now hear the remark from hundreds, that the appropriation of 1819, was one of the most beneficial to the state that has ever been made by the legislature. The popular vote of the state would never have sanctioned the construction of the Erie and Champlain canals; and yet the wisdom of the measure is now sanctioned by an enlightened world. Although the construction of these canals, may have operated prejudicially to some individuals and districts, yet the benefits which have resulted to the whole state have amply compensated for any personal inconvenience or injury they may have caused. So with the law to encourage agriculture; many did not foresee its benefits, who now acknowledge that they are palpable and important. We must judge of public measures by their fruits; and before we are competent to do this, the seed must germinate, the plant grow and blossom, and the fruit mature. This is particularly the case in all measures to improve agriculture. It is the province of wisdom to look ahead—to sow the useful seed, and to wait the coming harvest for the recompense. We must sow in the spring—and cultivate well in the summer, if we would gather an abundant harvest, in autumn.

We may almost lay it down as a maxim, that THE MENTAL AND MORAL CONDITION OF AN AGRICULTURAL DISTRICT, IS IN THE RATIO OF ITS IMPROVEMENT IN HUSBANDRY.—To borrow the spirit of a political saying—as *goes agriculture, so goes the State*. There is certainly much truth in the remark, that where the farming is slovenly and bad, ignorance, indolence, and vice, most generally abound: and that where agricultural improvement is most advanced, the population are most industrious, most intelligent and most moral. Knowledge begets a love of knowledge and when a man has acquired enough of it to convince him of its utility in his business, he considers it a part of his farming capital, and he is anxious to increase his stock of it, as the readiest means of improving his conditions in life, independent of the mental pleasures which it imparts. But not having acquired the requisite degree to enable him to appreciate its value, or to show him the defects of his system of management, he plods on, with listless indifference, in the ways of his fathers; and as great success, now-a-days, seldom rewards such labors, he too often becomes spiritless and dissatisfied, and relaxes into indolence, of which vice is too frequently the concomitant.

Under the existing state of things, how does it become us to act? What are we to do? Shall we fold our arms, leave agriculture to decline further, or to shift for itself, and depend upon more propitious seasons, and other Providential interpositions, to supply our wants; Shall we depend upon the cotton, rice, and tobacco of the south, which constitute our almost entire exports, to pay for the foreign commodities which we consume in the north? Or shall we, animated by the enterprise and love of independence which were

wont to animate our fathers—take in hand resolutely to provide abundantly for ourselves, by encouraging and enlightening agriculture, elevating its character, and stimulating it to new efforts, by suitable honors and rewards?

As regards the means of improvement, much has been done, and much is doing, by the agricultural periodicals of the day. The first of these was established at Baltimore, by John S. Skinner, in 1819; and we can now enumerate nearly twenty, that are diffusing light, awakening enterprise, and inciting to industry, in every section of our country—Probably one hundred thousand farmers, are now deriving instruction, and improving their practice, by the perusal of these journals; and it is not extravagant to say, that the benefits they are dispensing to the nation are equivalent to millions of dollars every year. But what is one hundred thousand compared to the gross agricultural population of the union? and how much greater would be their benefits if these Journals had access to every farm house, or even to every school-house, in the State? Besides giving much that is useful in the science, or the first principles of husbandry, they are continually advertising their readers of every improvement which is being made in the practical operations of the farm—of new seeds, and plants, and the mode of cultivating them, and of every improvement in labor-saving machines. In twelve numbers of the *Cultivator* may be noticed more than a hundred and twenty communications, mostly from practical farmers, residing in the different states, detailing their practice in different departments of husbandry, thus making their improvements known, in a short time, to its twenty thousand patrons.

By thus concentrating, as it were in a focus, the practical knowledge of the country, and then scattering it, like the solar rays, into every corner of the land, to fructify the earth, and by thus rendering it subservient to the benefit of all, some individuals have been enabled to obtain a clear profit of fifty, one hundred, and even one hundred and fifty dollars, on an acre of corn, or an acre of Swedish turnips, who had never before obtained a profit of thirty dollars an acre from either. And the benefits of these splendid results are not confined to the individuals who effected them: they are heralded in the agricultural journals; become known all over the country, and every new and successful effect at improvement, soon has its fifty, hundred, and its thousand imitators.

Suppose, for instance, what we hope will yet prove true, that an individual should discover an effectual preventive of the ravages of the Hessian fly, or grain worm—instead of benefiting him and a few neighbors, or becoming gradually known, as in olden times, the knowledge of it would now be spread in a few days, by the agricultural periodicals, into every corner of the land, and the advantages of the discovery would thus amount to millions in a single year. So with every other improvement in husbandry. It is not the province, nor is it the study of news journals and literary editors to deal extensively in agricultural concerns. They seldom publish even the incidental notices which are designed to subserve the interests of husbandry, without a special request, and a fee in the bargain, as though *they* had no personal interest in the progress of agricultural improvement. We would infer from these premises, that every man will promote his interest, and benefit the public, by patronising and endeavoring to

extend the circulation of our agricultural papers. They tend to no possible evil, while they are certainly calculated to do much public good.

Another means of facilitating agricultural improvement, is to introduce class books, into our common schools, for the senior boys, which shall teach those elementary principles of science which are indispensable to the successful practice of agriculture. A boy may be almost as easily taught to analyze soils, and to comprehend the leading principles of animal and vegetable physiology, as he can to commit to memory pages of matter, the knowledge of which seldom serves him any useful purpose in manhood. We must begin in youth, if we would bring about any material improvement in the habits of society. The good seed that is sown in the spring time of life is never lost,—it will ultimately sprout, and grow, and give its increase, as surely as the grain which we deposite in a fertile soil. The tree *will* grow as the twig is bent. Youth is the season to get instruction in the principles of the business which is to constitute the employment of life; and the more the knowledge which boys acquire in these principles, before they start in life for themselves, the more likely they are to prosper and become useful to society. The time that the senior boys in school devote to the business of the farm, will give to studies which are connected with their present and future business, an interest and an influence which will be as abiding as life.

But we would go farther in the business of agricultural instruction; we would establish schools to teach simultaneously, both the theory and practice of agriculture. We would carry something of the theory into the primary schools, and much of the practice into the school of science. Veterinary schools, to instruct in the anatomy and management of domestic animals, have long been established in Europe; their usefulness has been highly extolled, and their numbers are increasing. Switzerland, Prussia and France have also their schools, in which the science and practice of agriculture are taught to hundreds of young men, who are thereby enabled to manage their estates with greater benefit to themselves and the public, or to obtain honorable and lucrative situations as managers for others. We give bounties on our fisheries, to make them a nursery of seamen; but we give none upon agriculture, which is the best nursery of freemen. We spend millions annually to protect our commerce; but we give nothing to improve agriculture, which is the basis and support of that commerce. We protect our manufactures by a heavy tariff; yet agriculture, which furnishes the raw materials, and buys the fabrics, which the manufacturer consumes and vends, is left to protect itself. We have expended nearly three millions in this state, to aid in educating almost exclusively professional and other gentlemen; and yet we have given nothing exclusively to educate our agriculturists, who constitute the great mass of our population. And yet there is probably no employment in life capable of being more benefited by a professional education—none in which a professional education would conduce more to the public prosperity—than that managing our farms. A proper knowledge of soils, manures, vegetables and animals—of the agency of caloric, of moisture, of the atmosphere, and of light, in the economy of vegetable and animal growth—are all of great use to the farmer, and yet in what existing school can he acquire this

knowledge, during the period of life in which he ought to obtain his practical knowledge.

All impressions of general reform, to be successful, must be first made upon the ductile minds of the younger population. The old are apt to be too obstinately wedded to their juvenile habits and prejudices. Men are apt to grow up in creeds in which they are instructed,—be they Christian, Mahomedan or Pagan,—be they of good or bad husbandry. And if our youth are early instructed in the first elements of agriculture, and taught to consider it, what it truly is, an employment eminently calculated, above all others, to promote individual and national prosperity and happiness, they will aspire to honor and distinction in its labors—and will not so generally press to the cities—to the bar and the counter—for the means of gratifying a laudable ambition. And society will reap an abundant reward from the change. We will illustrate this by an historical fact. Ernest, former Duke of Saxe Gotha, had his people instructed by compendiums of every kind of useful knowledge, including music and drawing, that were put into the hands of youth in all country schools; and which a few years entirely changed the face of his principality: and “it is amazing,” adds our author, who wrote some years afterwards, “to observe the different irradiations of genius, in this and the adjacent circles. The effect was alike beneficial in the improvement of the soil and mind. And the example of Saxe Gotha, probably led to the excellent system of school instruction in agriculture, which has since been introduced by Prussia, and most of the German States.”

It has been stated, as an objection to the establishment of agricultural schools, that they would be only accessible to the rich. This objection even if well founded, would not go to lessen their value to the State: For if we would convert a few hundred drones, as the sons of rich men may generally be termed, into working bees, the public, as well as the young men themselves would certainly be gainers by the transformation. The complaint is that we have many consumers, and too few producers. This would tend to restore an equilibrium: For the examples of the rich, be they good or bad, have an imposing influence on the middling and lower classes; and thus to improve the habits and morals of the rich, would be the surest way to improve the condition of society. Hence, therefore, if agricultural schools can be instrumental in annually converting a few hundred of the idle and dissipated sons of wealth—or rather in preserving them from these habits—into wholesome industrious farmers, agricultural pursuits will be more respectable, and more followed; and we venture to predict, that then we shall not long continue to do, what we have done—import potatoes from Ireland and Germany, hay and oats from Scotland, eggs from France, and bread stuffs from all the countries of Europe, including the dominions of the autocrat of Russia, and of the Grand Turk.

But it is not exactly true, that the rich alone would find access into agricultural schools, were such established. The rich rely upon their paternal wealth, and have not often the ambition to become useful, at least by the habits of manual labor, which would be rigidly required in such schools. The schools would be filled with the youth from all classes of society, who aspired to fortune and independence, by a manly exercise of their mental and physical powers—the young men of this description, even from the poorer classes, do obtain admission into literary institutions, and they would into agricultural ones with

equal prospect of distinction and usefulness in after life. But whether these schools should be filled from the rich or poorer classes, or as we have supposed, from all classes indiscriminately, a certain and great public good would result from their establishment: the pupils would go to swell the producing classes of society, with habits of application and usefulness, minds imbued with scientific knowledge, bodies hale and robust, and hands practised in all the manual operations of the farm.

It verily seems to us certain, that if the importance of the subjects which we have discussed, could be justly appreciated by the community at large, every class of our citizens would concur in the propriety of a united effort to improve the condition of our husbandry, and of speedily adopting the measures we have suggested or others equally availing, to produce the desired result.

The Blending of Wine, Silk and Dairy Establishments.

[FROM THE FARMER'S REGISTER.]

Brinkleyville, Halifax Co., N. C., }
March 16. 1838. }

Having reason to believe it not contrary to the wishes of the writer, I send you, and offer for publication, a letter I received by our last weekly mail from N. Herbemont, Esq. of Columbia, South-Carolina; a gentleman, long known by the intelligent American public, as a zealous promoter, by his pen and example, of agriculture in general, as well as of the wine culture in particular. I beg leave, however, to accompany the publicity of this letter with a passing remark or two on some of the topics noticed therein.

As to honoring my name by conferring it on the kind of grape I have been instrumental in bringing into notice, I consider the doing of this rather premature, to say the least of it. The peculiar excellencies of this grape may be merely *local*. In our locality, it has amply proved itself to be as I have described. And it is the opinion of all intelligent visitors to my vineyard, who have seen it, partaken of its fruit, and judged of the wines therefrom, that it will prove a first rate kind for our country in general. But this remains to be tested by experience, the only infallible criterion in such matters. Apart from its locality, it may not be found worthy to retain a name at all.

And the above-named criterion will be had ere long; for I have lately sent vines and cuttings thereof into various sections of our country, as New-England and the states of New-York, Alabama, South-Carolina, and Ohio. N. Longworth, Esq. of Cincinnati, now noted as one of the greatest *vignerons* of our country, assured me in a late letter, that he would test the qualities of the Halifax as a wine grape in 18 months.

And if permitted to compare facetiously little matters with great ones, I know not but if I assent to Mr. Herbemont's proposition, I might do a like injustice as that done by Americus Vesputius to Columbus. As named, in answer to late interrogatories propounded to me in a letter from a highly esteemed correspondent, A. B. Spooner, Esq. this vine first attracted my attention in a vineyard of a Mr. Smith of this county; or, in an enclosure of his I call *nature's vineyard*,

because formed by leaving vines in woods while clearing, and the trees round which they had entwined themselves. But if thought, by those competent to judge, that the successful *cultivator* could rather be entitled to have the honor of the name, than the original *discoverer*, I should, as I have said to Mr. Herbermont, in answer to his suggestion, prefer retaining the *Halifax*, and have the grape called *Weller's Halifax*, if found, in due time, worthy of a name, or change of name.

On reading Mr. Herbermont's letter, I was highly gratified to find that, in publicly avoiding an opinion that the grape and silk culture might, with the greatest advantage, be conducted by the same hands and in the same establishment, I was but reiterating the sentiments of so good a judge on such subjects.

The peculiar advantages of blending a dairy establishment with those of the vine and silk culture, never occurred to my mind till suggested by Mr. Herbermont's letter. But as he states, it must be evident to every competent judge on the subject, that *negotively*, the business of the dairy establishment would not interrupt the business of the others, but would *positively* conduce, by its healthy diet and profit, to the advantage of all concerned. But here, I confess that the advantages of stock or cattle for enriching the ground, preparatory to the culture thereon of vines or the mulberry, are not, I consider, so great as some would suppose. According to my 'American System of Vine Culture,' manures (so far as necessary) from the place of *wo d-pile*, from low-grounds and sides of ditches, and from the woods, are competent, in general, to ensure complete success. That is, I conceive other than animal manure is better for both vine and mulberry culture; and that the resources on almost every plantation of chip manure, swamp or ditch bank dirt, rotten logs from the woods, surface earth from the same, and after vines or trees have sufficiently advanced, leaves, pine straw, or green pine boughs strewed thickly underneath, answer all purposes of sustaining the bearing and flourishing. But suppose, as Mr. H. states, the poorer lands of a plantation, (with the above help,) will answer for vine and silk culture, independent of help from the kine of the dairy, yet the richer lands need the latter help to sustain the stock in return, by clover and grasses, and roots, as well as to afford bread-stuff for all.

And here I am tempted to branch off into a long digression on the great advantages of clover, other grasses, and root culture, to support the stock, as well as for other purposes; and advantages of stock, on the other hand, for keeping up and enriching lands preparatory to the above objects of culture; but aware that time and space forbid I beg leave to add, in conclusion, a few remarks only on the dairy, and means of sustaining one to the greatest advantage in our southern country. And first a general error is to be avoided; that is, of suffering cattle to run at large, instead of soiling or pasturing, as is done in England, whence come the improved breeds of cattle, and as is done in Goshen, the famous place for butter in New-York state. Another error connected with the above, and unknown, I believe, in the above-named places is that of allowing the calves to suck the milch cows. I say connected with the above, for I cannot conceive any reason for the practice, except that of inducing the dams, wandering in the woods in the day time, to return to their calvs at night. Now field-pasturing avoids the troublesome business of *whipping* calves away from their dams before a moiety of the milk can be ob-

tained, an absurd notion that cows cannot be induced to "let down their milk" before the calves first suck. But here to avoid these errors, I confess it requires preparatory steps—steps almost as necessary as to have a mulberry orchard before you can make silk. The clover or other grass culture, should be first attended to in order to sustain both calves and cows; and it is also desirable to enter upon ruta-baga culture, not to name other esculents. And I candidly confess, that in our southern climate, connected with sandy soil, are peculiar difficulties to overcome, in order to successful clover culture; which culture may be called the key to all other permanent improvement and sustaining of lands. But such difficulties (as I, in common with others, have proved) are not insurmountable. I have found that even on most light and sandy soils, by first manuring well, if necessary, (leached ashes highly important,) and sowing clover with wheat early in the fall, after taking of a forward crop of corn, or cutting up some after grains are glazed, good clover lots may be had, and a system of improvement thereby kept up, as well as the dairy. The object in sowing clover in the fall on light sandy soils, is to have the clover grown in the fall beyond danger of being winter-killed, and to have it so well rooted in the spring, as to sustain safely the summer droughts, so heating to sandy soils. For greater security of the crop by pushing the growth, I sow a mixture of plaster of Paris and leached ashes—say, one bushel of the former to three of the latter per acre, after the clover is in third leaf. An old field of broom sedge enclosed will answer for a standing pasture till the clover is in blossom, or fit to pasture or cut for soiling.

The ruta-baga I have found a sure and very abundant crop, by manuring plentifully in the drill where necessary, and sowing, or rather planting, about or before the middle of July. No better vegetable, not only for family use in general, but for fattening cattle and making cows give abundance of milk in winter.

By the aforesaid plan of managing cows and calves, I have had both to do far better than those of my neighbors, by the old one in practice here. From *two* cows, I have had produced more milk and butter than some around me from *two dozen*. It is true, at first, I had to use personal vigilance, as well as example, to prevent ignorant hirelings from bringing to pass, by negligence, their own prophecies of cows going *dry* and calves *starving*, under the *new* plan. Had to supervise the milking process, and teach the calves by insertion of a finger in their mouths, under the milk at first, to drink (their mother's milk for two or three weeks, afterwards corn meal gruel;) but this done, even prejudiced ignorance itself had to confess *my* plan the best. As I am for abridging labor in all feasible cases (my vineyards afford an example, under the "American System," of pruning only in summer, and after prevented being bushy vines not curtailed in length, and no necessary work on plantation by common quota of hands much interrupted) shall I suggest a method to save the hard work of a hand, where the dairy establishment is considerable; which saving may be considered especially important, where the three sorts of business may be conducted in the same establishment?

The method I would propose is that of putting the labor of churning upon *dogs*; and that, too, without abridging the plantation usefulness of these animals. Various expedients were once resorted to in the Goshen district of *butter* celebrity, as that of a rolling or log machine drawn by a horse. But finally they fixed upon a process

that combined simplicity and economy. A machine, costing a mere trifle, consisting in part of boards or planks, so put together that the surface resembled a large cart wheel, and this, in the position of an inclined plain, was the receptacle for the dog: so placed thereon that he must *step* and *turn* the wheel, or *choke*; (the former *alternative* he always *chooses*.) The turning of the wheel moved some simple machinery above, connected with the churn within doors.

In fine, Mr. Editor, to bring this communication to a close (now extended to a length unthought of at first on my part.) I would most respectfully suggest, that at this period, when premiums are offered by a wise munificence of some legislative bodies of our country, to encourage silk culture, as well as other agricultural pursuits, that a handsome reward be held out to individuals of *capital*, as well as of spirit add enterprise, to exhibit practically the benign bearing or effects of combining the vine and silk culture, and dairy business, in one large or considerable establishment. And may I here be permitted to express a wish, that the legislative bodies of the Old Dominion and the Carolinas would *snatch* the *laurel* from their sister states, in being first to call forth this enterprise by their timely munificence.

SIDNEY WELLER.

A remark or two I wish to add, or wish to be added, if deemed best, by way of notes or P. S.

The entire *Goshen* system alluded to, of managing cows and calves, is to let the calves intended for *veal* suck all the milk of their dams, for three or four weeks, and then butcher them. But those intended for raising, as before stated, are immediately separated from the cows, and learned to drink.

One advantage, not to be overlooked, of combining silk and vine culture is the healthiness of grape fruit; or that all employed in the blended establishments may have, in the most sickly season of the year, free access to a diet, that not only counteracts or anticipates disease, but excellent, if from any cause disease occurs. Invalids, by advice of physicians in some parts of Europe, with the happiest effect, confine themselves for months to a grape diet; making it answer for both *meat* and *drink*.

That a grape diet of the right kind (I mean *ripe* berries of select varieties for American vineyards, not *green* ones, or those *snatched* from the birds and opossums in the woods.) I know is excellent, from the experience of my own family and neighborhood. We are in general never more healthy than in grape culture; and none of my household and hands, of late years, have been *stinted*, but have partaken abundantly of grapes about two months.

I have known persons, in cases of severe and continued sickness, to relish good grapes when they could eat nothing else, and there was reason to believe their lives were thereby saved.

The *Isabella* grape is particularly recommended in cases of billious fever, and from trial, I believe the *Scuppernong*, and my *Halifax*, are not behind it in point of healthiness. But it may be objected, that grapes for common diet must be very *costly*. Not so. If vineyards have a proper selection and management, there are few things else cultivated, will produce more human food from the same space of ground.

Mr. Broddie's *Scuppernong* vineyard (I have noticed before,) of half an acre and fourteen vines, yields 20 barrels of wine annually; and all his neighbors partake abundantly, by visitations and carrying away baskets of the fruit.

Of the yield of my vines I intend to speak, in a separate communication, to sustain the same position. Suffice it to say here, that owing to the fatality of the past season to grapes predisposed to rot, my chief dependence for fruit and wine was on the Scuppernong and Halifax. Avoiding particulars here, I will say, that from a small space of ground canopied with these vines, after bushels being taken away by visitors (often 20 a day) and sold to those sending from a distance: I made upwards of 100 gallons of wine. I have noticed, after a visitation of 20 or more persons to a few vines of the above-named sorts, no perceptible alteration of appearance, but the same thick *purple* or dark *cloud* of fruit remaining. I cannot forbear here stating a particular or so in regard to the yield of these vines. One Scuppernong, a square of ten feet of canopy being measured, produced at the rate of 870 bushels per acre, (a bushel of Scuppernong grapes makes nearly four gallons of wine when well pressed,) and that, too, after giving its share of fruit to visitors. One Halifax, at the third year's cultivation, yielded a half bushel of grapes; another at the fifth year, a bushel; and another grafted one at the fourth year's growth, one and a half bushels. (One bushel of Halifax berries in racemes, makes more than three gallons of wine; if pulled from racemes, would make as much as Scuppernong, I presume.) And considering the space occupied by the foregoing vines, I believe the yield full as great for the ground, as that of the Scuppernong above-named.

By the facts of warning against disappointment of success in clover culture, in our southern *sandy soils*, I would not be understood to discourage sowing clover in the *spring*, in ordinary southern soils. The state of North-Carolina is now going *ahead* in clover culture in many sections of the country, through the light thrown thereon by our agricultural periodicals. Last summer, I saw as fine a field of clover as ever I beheld, on the plantation of Mr. Massenburgh, a very intelligent, enterprising farmer, near Louisburg, N. C.; and if I recollect his information, he was not even indebted to plaster of Paris for his success. My excellent and intelligent neighbor, Mr. William Thorne, has successfully cultivated clover for several years; but the first year he commenced would have been a total failure, had he not resorted to a dressing of plaster. A long dry spell came on in the summer, after he had sowed a bushel of clover seed in the spring, and his young clover was apparently *killed*; but the plaster revived it, and a very fine crop was the consequence of its resuscitation.

S. WELLER.

On Grape and Silk Culture.

[FROM THE FARMER'S REGISTER.]

TO SIDNEY WELLER, Esq.

Columbia, S. C., March 8, 1838.

Dear Sir—I have, yesterday received your obliging letter of the 26th ult., and also three small cuttings of your grape vine, which you call "Halifax," and which I propose to call "Weller," after you. It is perfectly fair to name plants, or fruit of great value, by the name of the person who introduces them, not only into notice, but takes great pains to extend their culture. By this means, bene-

factors of mankind have thier names honorably transmitted to posterity.

I am glad that your opinion coincides with mine, as relates to the culture of the vine and silk at the same time by the same person. There are, perhaps, no two articles of culture, the prosecution of which interferes as little with each other: for at the very time that the silk worms require all the attention and care necessary to their welfare, the vineyard should not be entered, indeed with the proper degree of industry required in the culture of any thing, the vines must be, during that short period, in such a state as not to require any thing being done to them. Besides this coincidence, as to time, much is to be done in the vineyard that requires more attention than strength; so that the same persons who are adequate to the cares of the silkworms, are also sufficient to do much that is required in the vineyard. What sources of wealth and comfort, will, I hope, be some day produced, by the joint culture of these two valuable articles. They are the more valuable that they require no capital of any amount to be established, provided there are larger proprietors in the neighborhood. These would always be ready and willing to purchase of their poorer neighbors, their cocoons and the grapes of their own raisings; and these would gradually learn the arts of preparing the silk for market, and of making wine, *secundem artem*, as their profit would, in time, afford them the means of forming suitable establishments for these purposes. Another great advantage attending these cultures, so as to make them suitable for the poorer class of farmers as well as the richer ones, is that both these articles of culture, require land only of inferior quality for their fullest success. It is certainly a fact, that the wines produced on poor light lands, are of a superior quality to those produced on richer clay lands. I have no experience in the culture of silk sufficient to enable me to speak of my own knowledge; but the books I have read on the subject, state the fact clearly and distinctly, that the mulberry leaves produced on poor land, produce finer and superior silk. Here are, then, two objects as valuable, if not more so, than any other yet cultivated in this country, which offer the incalculable advantage of leaving the richer lands for other necessary articles of culture. I regret much that I am too old to hope to see the immense benefits, which our country will derive from the culture of the silk and the vine. (We are never at a loss for finding a good reason for wishing to live long.) There is, I think, another object of rural economy, that would harmonize well with the two mentioned above, and would tend to the great comfort of the cultivator, and that is the dairy. It appears to me that a dairy establishment would scarcely interfere at all, either with the raising of silk or of wine, and it would undoubtedly add much to the convenience and comforts, not only of the cultivators, but also of all the country around.

I had no idea at all of writing on these subjects, when I began to write; but my pen would go on, and I gave it its way. I merely intended to say, that I had received the three grape cuttings you were so obliging as to send me; that I gave one of them to one of my neighbors, who is also a zealous cultivator of the vine, and that I grafted the other two. I hope the box you are sending, will also arrive safe and in due season.

I am, respectfully, sir, your obedient servant,

N. HERBEMONT.

*Sassafras, Rat-proof Meat Houses, Close-grazing, Hill-side
Ditches.*

[FROM THE FARMERS' REGISTER.]

Waterloo, N. C. March 26, 1838.

In a former number of the Register, I suggested the idea of boring into sassafras trees, and pouring into the opening thus made, some liquid substances, which might, by being carried with the sap into every part of the tree and roots, destroy their vitality so as entirely to rid us of that most troublesome nuisance. By way of beginning the experiment in the latter part of the last summer, I bored into a sassafras tree of about five inches diameter with a half inch auger, and poured in about a table-spoonful of sulphuric acid. Within two or three days, the leaves on about one half of the tree began to turn of a reddish brown color, and by the fourth or fifth day, were black and dry. The body and branches likewise of about half the tree, put on the appearance of dead half-seasoned wood, as appeared from incisions made with a knife, whilst the remaining half of body, branches and leaves, preserved the appearance of other adjacent trees, of the same sort. This state of things continued until frost, when the leaves on the living part of the tree faded and fell; those on the dead part, remained until lately. No farther examination was made until recently. The whole tree now appears to be dead. I will watch it, and inform you whether the tree dies or not, and whether any sprouts spring up from the roots. This may appear a small matter to be made the subject of a communication for the Farmers' Register; yet I am sure there are many, very many, by whom any practicable and cheap means of destroying the sassafras, will be joyfully and thankfully received.

Having noticed several plans recommended in the Register for rendering meat houses rat-proof, and believing one which I have adopted greatly preferable on the score of both economy and effect I will in a very few words describe it, pledging myself that it will prove effectual, wherever properly executed. Have your house built in the ordinary way of framed buildings, leaving no opening large enough to admit rats through the body, roof or door. Fill up the floor to the depth of twelve inches or more with common quartz stone, or as it is called in our country dialect, white flint rock, and pound them with a stone-mason's hammer until they become of the proper degree of fineness, and lie close enough to prevent a mouse from finding an opening in them large enough to hide himself.

I was greatly surprised upon the receipt of the last No. of the Register, to find a highly intelligent correspondent of yours, maintaining the position, that "*constant, and even heavy grazing, does not of necessity impoverish land.*" I had previously thought, that if there was unanimity of opinion amongst farmers on any subject that admitted a variance, it was in relation to grazing. I think your correspondent has been as unfortunate in his arguments to sustain his position, as he has been in assuming the position itself. He says the commons in the vicinity of towns, &c., grow rich in consequence of heavy grazing. As well might he have said, that our summer cow-pens are enriched by close grazing, or that his taking money out of his own chest, was the reason it was becoming daily fuller and fuller. In all three cases, the true cause of improvement may be found in the fact, that the ad-

dita greatly exceed the *abstracta*. I am theoretically and practically a grazier myself, and keep a large stock; but the idea of improving land by mere grazing, is one that I had never dreamed of. I am improving my own land, not *by* grazing, but *in spite of it*.

In relation to hill-side ditching, which I believe contributes more to the value of land than any other improvement which can possibly be made at the same expense, your correspondent alluded to above, is in my opinion much more fortunate. He thinks the ditches have not usually sufficient fall. I think the fall ought to be three times as much as it usually is. Those which I have made have at least double as much as any I have ever seen; yet I intend to give those I may make in future, still more. The more fall they have, the less is the necessity of having them wide or deep, and of course the less labor is required to make them. Should they exhibit a disposition to wash too deep, a few stones, blocks of wood, brush, or almost any thing not light enough to be carried off by the water thrown into the ditches, in heaps about a hundred yards apart, will effectually prevent farther washing. As far as my observation extends, I have seen many fill up, but not one wash into a gully.

W. O. GREGORY.

On Pruning Forest Trees and Ornamental Shrubs.

[FROM THE NEW-ENGLAND FARMER.]

At the present period few things can be done with more advantage, in fine days, on the farm and garden, than the pruning of hardy forest trees, and ornamental shrubs, and in many cases hardy fruit trees and vines, both ornamental and useful, may not only be pruned with the greatest safety, but to a good advantage, as such work greatly forwards the business on the farm and garden in the spring.

There are few things more essential than pruning ornamental forest trees, and few branches of horticulture more neglected in many cases, as most people have an idea that in such plantations nature should be allowed to have her own course; however, a little consideration teaches us to the contrary. In most plantations of forest trees, the ground is well prepared previous to its being planted, and the consequence is, the young trees make a rapid growth, and come in contact with one another, and if they are not thinned, many of their under and side branches die as the plants grow in height and size, and the dead wood encumbers and weakens the live. There are hundreds of acres of land covered with forest trees at this time, that are much in want of this kind of pruning or thinning out. Trees in such situations should also be pruned into a handsome and regular shape, and every thing of the kind should be forwarded previous to the coming spring, when ploughing, crossing, and many other things will have to be done, and the trees will be allowed to grow and injure one year after another. I could say a great deal more on pruning, but at present must defer it until a better opportunity.

A FORESTER.

Manures.

[FROM THE COLUMBIA TELESCOPE.]

Mr. JOHNSTON.—In Ruffin's Farmers' Register for May, 1838, p. 111, is an extract from a letter by Lardner Vauxem, Esq., formerly my aid in the College here, giving a very brief account of the localities of what he terms *shell marl*, in South-Carolina, viz at the Santee Canal, Eutaw Springs, Dr. Jameson's near Orangeburgh Court House, Mr. Darby's, in St. Matthew's, at Godfrey's ferry, on the Pedee river, on the Edisto, &c. To which I have to add, a locality two miles south of Darlington Court House. *Marle*, technically, is a soil composed of sand, clay, and limestone, where the latter earth is in the proportion of one third or more. I have reason to believe that all the localities consist principally of limestone, with various proportions of sand, but very small quantity of clay, or argillaceous earth.

My son brought me, a short time ago, a specimen of the shells and soil from the great oyster bank on the Santee, which I believe extends eight or ten miles. I have also received from Judge D. Johnson, a specimen of the shell marle near Darlington Court House. I regard all these, from the character of the shells in them, to belong to the Tertiary formation—in modern phraseology, antediluvian.

Of the specimen from Santee, I took 100 grains of an oyster shell, (of an extinct species.) I dissolved it in muriatic acid, and about 5 per cent. of sand remained undissolved. I threw down all the limestone with carbonate of potash, boiling the solution to drive away any excess of carbonic acid, which is apt to keep limestone in solution. The liquor being filtered, and the residuum dried and weighed, furnished the expected proportion of limestone.

I took the earth with which the inside of the shell was filled up. I dissolved it as before, procuring about 90 per cent. of limestone. The residuum was chiefly sand, with but little clay-earth.

I took 100 grains of the common gravelly soil furnished me by Judge D. Johnson, from Darlington Court House vicinity. I rejected all the larger fragments of shells, taking what appeared to be the soil. I treated it as before, with muriatic acid, which dissolved perfectly 75 per cent. of the gravelly soil, leaving (when dried perfectly and weighed) 25 per cent. of soil, almost entirely sand, undissolved.

Here, then, in various parts of our State, are deposits of shell limestone, just as valuable for manure as any other whatever, to sandy, to clayey, or to an intermixture of sandy and clayey soil. A source of wealth that is of very great extent and very great value.

Limestone in Europe is applied when burnt into lime, sometimes to the amount of 300 bushels per acre. Twenty hundred weight of limestone ought to be exposed to fire in the kiln, till it will yield but eleven hundred weight, or more accurately from 43 to 44 per cent. of carbonic acid ought to be driven off by the heat; else the lime is imperfectly burnt, and will not make good mortar. When laid and slacked upon the land, it regains from the air about 30 per cent. of carbonic acid in about 10 days, and is gradually changed into limestone again. Hence the necessity of keeping lime from the air, which is to be used as a cement; hence, too, powdered limestone may be as good as lime in most cases. I would, therefore, were I a farmer, merely grind and screen the shell marle, without burning it, and put at least 300 or 350 bushels of the screened earth per acre, on the land.

This will form a good constitution of soil, and will permanently prove useful. I should deem 400 bushels per acre, on sandy soils, not too much, and the addition of clay will add to the productive power of the mixture thus made. But as I am not a practical farmer, I say this with deference to the judgment of those who are.

I am, &c.

THOMAS COOPER, M. D.

Cultivation of Cotton in Hindostan.

[FROM THE QUARTERLY JOURNAL OF AGRICULTURE.]

From the cane we now pass to the cotton-tree, many species of which are indigenous to the soil of India. Mr. Sullivan, late collector at Coimbatore, says, that two kinds are native to that part of the country; and Mr. Gibbon, in his essay on the agriculture of Behar, specifies three varieties as cultivated there, Rebdhea, Pawlee, and Jeitowa. The Rebdhea is the finest, and is sown about the autumnal equinox, along with with oil seeds. These risen in January, when the stalks are pulled up by the roots, and the ground thoroughly hoed and watered. This operation is continued through the month of February, March, April, and May, when the cotton ripens. It is said, that the fine Dacca muslin was formerly made from this cotton, but now there is none exported from the district where it grows.

The Hawlee cotton is sown along with the Indian corn in June. The corn is cut in September, when the lands are hoed and watered only two or three times until May, when the pods are gathered. The produce and quantity of this variety is nearly equal to that of the Rebdhea, the quantity of seed to cotton being as three to one. In like manner, the Jeitowa cotton is sown along with Indian corn at the beginning of the rains. While growing it requires neither cultivation nor watering, and the proportion of seed to cotton is as five to one. This is the kind of cotton so well known in commerce. Another kind, called Kokety is cultivated in the north of Tihoot; it is of a yellow color, and is preferred for making fine thread. The produce is generally scanty and impoverished. We believe that there is great truth in the supposition, that the degeneracy of the Indian cotton may be in a great measure imputed to the careless and slovenly manner in which the natives pick it from the pods on the tree, taking a portion of the dry brittle husk along with it, and allowing it to acquire dirt and sand by carelessly tossing it about on the ground when separating the seed. In America this is obviated by the trees being planted in rows at considerable distances, so that, in gathering it, none of the dried leaves are brushed off among the fine fibres of the cotton.

By adopting this mode, and by using machines for cleaning the cotton from the seed, there can be little doubt that the staple and fineness of the Indian cotton might be so much improved as again to fit it for the English market, and compete with the American. "Thousands and thousands of acres," says Mr. Graham, "black as ink, and of inexhaustible fertility, lie a perfect waste on the plains, betwixt any two villages in the Deccan, all capable of producing cotton and other products available to the wants of man. Labor is also so remarkably cheap that in Guzerat a man is hired, not including his food, for the

Reproduced from poor material

1838.]

Cotton in Hindostan.

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small sum of £3 per annum. In the Deccan, according to the reports of Lieutenant Colonel Sykes, the average is about £3 13s.*

As constituting the material of the principal manufacture of India, cotton ranks next in importance to rice, its staple grain. We have already hinted that the quality of that at present raised by no means equals that either of Brazil or of North America; yet it is reasonable to suppose, in a country where the cotton-tree in such varieties grows spontaneously, and in such luxuriance, that a due attention paid to its cultivation, would soon render the product superior to that of countries not so congenial to it. In reference to this article, the late Sir John Malcolm, that enthusiastic benefactor of India, informs us, that, "deeming this a subject of much national importance, I not only gave it my attention in India, but have continued to do so in England. I visited Manchester, and have communicated with all from whom I could obtain information calculated to promote the object. The result has been a conviction, that a much greater proportion of the trade in this material than India now enjoys, may, with care and management, be obtained to that country, a result which will prove equally beneficial to it and England." Speaking of the Bourbon cotton, Mr. Sullivan also says, that "all that is wanting to evince the extended cultivation of this species of cotton, which is superior to most of the American uplands, is the judicious application of a large capital. A steady encouragement of the staple would be one of the greatest benefits that England could confer upon her Indian empire." It may be remembered by some, that it was the produce of this plant which sold in the London market, in 1830, at 8d. per pound, and which, if a sufficient quantity could have been obtained, would, in the opinion of brokers, have realized 9d. From the number of valuable papers on the subject in the last volume of the *Agricultural Transactions of India*,† it is evident that an ardent desire to improve this very valuable plant, now pervades India; both the soil and climate of which seem so admirably calculated to bring it to a perfection it has by no means hitherto attained there. Indeed, we have little doubt that, with proper care and cultivation, the cotton of India may be made to compete with the American, and rendered fit for the English market—a circumstance which would be extremely beneficial for both countries, as we might receive all our raw material from the East, and, through the aid of our admirable machinery, return it to them again in the shape of cloths of our varied manufacture.

* Means of Ameliorating India, pp. 66-7.

† We particularly allude to the Papers on the Cultivation of Cotton, by Baboo Radhakant Deb. On the Culture of Cotton in the Doab and Bundelkund, by W. Vincent, Esq. On the Artificial Production of New Varieties of Cotton, by H. Piddington, Esq. Method of Preserving the Cotton Plant in Cayenne. Remarks on the Cotton of Ava, by Major Burney. On the Cotton of Cachar, by Captain Fisher. On the Cotton of Dacca, by Dr. G. Lamb. On the Culture of Upland Georgia Cotton at Allahabad, by Mr. Higgins, &c., &c.

Training Vines.

[FROM THE NEW-YORK CULTIVATOR.]

New-Haven, (Conn.) March 13.

JESSE BUEL, Esq.—Sir.—I have had the Isabella Grape in my garden since 1819; but the crop of fruit has not been good and full, oftener than once in three years. The failure has usually been caused by the *rotting* of the green fruit, about the time it attains its full size. Every means of preventing that I could find any where suggested, has been fully tried; such as long and short pruning and no pruning, thick and spare, upright and horizontal training; topping the fruit branches, thinning them out, plucking the leaves, &c., without any perceptible benefit.

But having read or been informed, (I cannot say which) that in the vineyards of Madeira, the vines are trained on a horizontal arbor, about three feet high, in such a manner as completely to shade the whole ground, it occurred to me that it might be important, where the summer sun is very powerful, (as with us) to shade the roots of the vines. To ascertain the effect of such a protection of the roots, in the fall of 1834, I pruned about 20 young vines, which had grown at random, so as to leave from five to eight branches, spreading all ways from the centre or root, like the spokes of a wheel about four feet. These I tied up to stakes set in a circle around the vine, leaving the branches from twelve to eighteen inches from the ground. The vines were left in this State to grow as they would, and by midsummer (1835) they completely shaded the ground, for six or eight feet from the centre. *No fruit rotted on these vines.* The experiment was continued upon the same vines last season, and with the same result. During both seasons, the fruit on vines trained upon an upright trellis, (the roots of course exposed to the sun) has been in a great measure lost by rotting.

This experiment I should consider decisive, but for one circumstance, the vines first mentioned were *young*, and the others *old*. Whether this has affected the result, is yet to be determined.

I ought perhaps to remark (what I was not prepared to expect) that the fruit ripened on the vines, shaded, as before described, a fortnight earlier than the others, and was in every respect better.

N. D.

October 10th, 1837.—The experience of another season gives the same result stated above, except that none of the grapes ripened, being destroyed by the frost October 4th-5th. To ascertain the effect of the vine's *age* upon the fruit, I trained a vine upon a trellis, last spring, of the same age with those whose roots have been shaded, and the fruit upon it has been much mildewed and considerably rotted, while the fruit on the other vine has been bright and sound.

Explosion of Steam Boilers.

The valves being in order, it is generally considered that explosions arise chiefly from the sinking of the water below a certain level. M. Sorel has proposed a method to obviate this by the introduction of a tube into the boiler, descending a little lower than the said level. The orifice of the pipe is to be kept closed by means of a valve carried by a float, which sinking, as the water descends, beneath the desired level, opens the valve and permits the steam to pass out.—*Lon. Rail. Mag.*

PART III.

MISCELLANEOUS INTELLIGENCE.

At a meeting of the *Beaufort Agricultural Society*, held on the 9th June, the following Gentlemen were elected Officers for the ensuing year :

WILLIAM ELLIOTT, Esq., *President*.

JOHN M. VERDIER, Esq., *1st Vice-President*.

EDWARD BARNWELL, Esq., *2d Vice-President*.

H. W. RICHARDSON, M. D., *Corresponding Secretary*.

RICHARD REYNOLDS, Esq., *Recording Secretary*.

EDWARD BARNWELL, Esq. was elected 2d Vice-President in the place of WM. BARNWELL, Esq., who declined re-election. The other Officers were re-elected.

An eloquent and appropriate Address was then delivered by WM. ELLIOTT, Esq., President of the Society : which we have crowded into this number, for the gratification of our readers. We regret it came too late to be inserted in its proper place.

JOHN M. VERDIER, Esq., was appointed to deliver the next Anniversary Address.

The Uses of Truffles.—Truffles are made use of as a food ; but not being found every where, they are consequently rare and dear, and seldom appear except on the tables of the rich. They were known as a delicacy by the ancients, and were especially esteemed amongst the Romans, as a dainty and favorite dish. Dioscorides and Pliny make mention of them ; the latter (*Hist. Nat.*, lib. xix. cap. 2) in particular, relates an extraordinary circumstance which happened at a Roman truffle feast. As Lucius Lucinius, the Roman prætor at Carthagenæ in Spain, was eating a truffle, he bit a penny piece (denarius) a Roman silver coin. Whence Pliny infers, truffles arise from the accretion of matter deposited in the earth, which fact Geoffroy endeavors to disprove.

They are very nourishing, and said to be strong stimulants. They are often eaten, peeled raw, thinly sliced, and then soaked in wine, or only roasted in ashes. The art of cookery teaches us how to prepare them in many different ways, and to make them palatable ; they are used as an addition and seasoning to meat pies, sauces, and ragouts, and a particular dish is made of them nearly alone. They are also used for stuffing turkeys, &c. In medicine they were formerly employed, when boiled, as a cataplasm for the quinsy ; but now like many other medicines in that disorder, are but little esteemed. Many physicians prohibit their being eaten, and ascribe colic, palsy, and other disorders to them. The classical Frank, in his *Medicinal Policy*, vol. iii. p. 309 also points out certain consequences as proceeding from their immoderate use.

In trade, truffles perform an inferior part, they are marinated, (salted, and afterwards preserved in oil and vinegar) and sent principally from Aix, Avignon, Bordeaux, Perigord, Certe, and Nic, to all the principal towns of Europe, where they are served up at table even in winter. The merchants have different ways of preserving them. Some, after they are dug out, immediately wrap them, while fresh, in waxed paper, lay them into a glass from which the air is extracted, and set the glass in a larger vessel filled with water. Others merely dip them in oil or fat, by which means, the effect of the air, and in some degree, dryness, withering, and decay, are for a time prevented. In trade, truffles are distinguished by different names, which have relation partly to the place where they are found, as Perigord truffles ; and partly to some peculiarity in themselves, as white truffles, (*bianchetti*) &c. They are sold in the neighborhood of Carlsruhe, and in other

places where they are found, at two florins (about half a crown) per pound, and cost when sent to a distance, especially in winter, from six to ten florins (from 7s. 6d. to 12s. 6d.) per pound. In the arts, as far as I know, they are not used. In London, they sell at from 7s. to 16s. per lb.—*Gard. Mag.*

Rohan Potato.—We had but just sent our article to press respecting new vegetables, under which we spoke of this potato, when the following met our eye, in the *Yonkee Farmer*, copied from a French journal. It gives a much more favorable account of it than we gathered from Judge Bugé's paper, and, if true, gives it a place among the very best kinds of potatoes which have ever been imported into this country. We shall endeavor to make a trial of it ourselves the coming season:

"I send you, through my friend, M. Romilly, the potato I promised you, and to which my name has been given in this country. The history of the potato is not less singular than the potato itself. The man who obtained it from seed in Holland, four years ago, shows it, but will not give it to any person: he has refused it to King William. He has cultivated it in a little walled enclosure; he only wishes to see it in perfection, and the seed of the following year. He causes them to be taken up in his presence, and keeps them under lock and key. 'Tis at great risk that I have been able to procure two tubers. This exclusive amateur having learnt that I had some cactuses, which he wished much to have, begged of me to give him some. I wished no money, but very much to have some of his wonderful potato. He gave me two of them, and made me give my word of honor, that I would never send any of them to Holland, Belgium, England, Prussia or Germany. Happily he has not thought of Switzerland nor France; for without this omission, I could not now have the pleasure of offering them to you.

"This is the mode of cultivating this potato: The earth is dug to the depth of twenty inches; make the distance between the holes four feet, and put two or three eyes or sets in each hole. Earth up frequently. The stalks reaching six or seven feet in height, need to be supported on transverse stakes. The potato being late, the tubers, which are very farinaceous, or mealy, should only be taken up about Martinmas, when the stalks wither.

"To give you an idea of the extraordinary produce of this potato, I give three examples at random. M. F. Martial, of Alois, gathered last autumn, tubers weighing thirteen pounds seven ounces, eleven pounds nine ounces, and nine pounds twelve ounces. M. de Montel, a proprietor near me, asked me for tubers, when I could not give him more than a single small tuber, having four eyes. He weighed it for curiosity, and found it lacked a few grains of half an ounce. This small tuber being planted, produced forty-eight pounds. The attorney of the abbey of Autrerie, canton of Fribourg, to whom I gave two tubers two years ago, and who, delighted with his fine harvest, after having eaten and given some to his friends, planted the rest, and obtained last autumn six double horse-loads and eight scuttle-fulls. It is not the largest tubers that succeed best as seed."—*Horticultural Register*.

The Circular Cut.—Most persons remember their surprise, when children, at the great length of thong supplied from a small piece of leather, by the spiral, or, as it is technically called, "the circular cut." The wonder was worked up into a fable, for Dido was said to have obtained the ground on which Carthage stood, by bargaining for as much as a bull's hide would enclose, and then cutting the hide into thongs, so as to take in a space far larger than the seller expected. This story has gone the round of the world. A friend of ours was informed in Persia, that the English obtained possession of Calcutta by the very same stratagem; the Chinese tell the story of one of their emperors, and the North American Indians believe that this was one of the countless artifices by which the white men deceived their brethren.—*Athenæum*.

Origin of Amber.—This substance was found at Muskaur, in large quantity in fossil wood, belonging evidently to the genus *Abies*, and in other specimens very nearly allied to the genus *Larix*. They are all found in the brown coal formation. Amber likewise occurs in coniferous plants, associated with ferns in the coal of Wening-Rackwitz. Since, then, it appears that we already know four different species of tree which afford amber, (and the number would doubtless be increased by attentive investigation) the probability seems to me to be rendered still stronger, that amber is nothing else than an indurated resin, derived from various trees of the family of the *Coniferae*; which resin is found in a like condition in all zones, because its usual original depositories, viz. beds of brown coal, have been formed almost every where under similar circumstances.—*Ed. Jour.*

Communicated for the Southern Agriculturist.

Monthly Calendar of Horticulture, &c.

FOR JULY.

Turnips.—You may in this month sow some Early Dutch and other varieties of turnips. Only a few, however, should be sown, as they are very liable to rot by the time they attain the size of a dollar, especially should the season prove rainy.

Ruta Baga.—This variety of turnip is slower in its growth and much hardier, than the above, and this is the proper season to sow them for a general crop. If you wish them in large quantities, have the ground well broke up with the plough, and have furrows laid off every 18 inches or 2 feet—(if the ground is very rich, they may be even further apart)—into these furrows have manure spread, and then reverse the furrows and form ridges over the manure; have these dressed with the hoe, and on the top sow your seeds. If you have but few, sow a half dozen or so every 9 inches, and when they come up, thin them out to one. The others may be set either out into a new compartment, or be used for supplying those places which have missed. You may also (should your ground not be ready) sow them in a seed bed, and transplant them, as you would cabbage plants; they take root fully as well.

Kohl Rabbi.—These may be sown at the same time, and treated in every respect as the Ruta Baga.

Carrots, Beets, Salsafy, Parsnips.—If the season prove moist, you may sow seeds of the above vegetables. We would not recommend many to be ventured, as at this season unless well protected, and that for some time, they are very likely to be destroyed by the hot sun and rains. For directions for sowing and cultivating them, see directions in the January number.

Cabbages.—Continue to sow cabbage seeds, so as to provide against any accident which may befall those sown in former months. It is better to waste a few seeds, than to have no plants to set out when the proper time arrives. Those plants which are large enough, can now be transplanted out where they are to remain. Let it be borne in mind, that to produce fine heads, the ground should be very rich.

Cauliflowers and Brocoli.—The plants from seeds sown the early part of last month, will now be of a size to transplant out. For directions, see May number. You may sow some more seeds, which, if they succeed, will give you flowers in the spring.

Tomatoes.—You will have plants fit to set out from the seeds sown last month, but should you have neglected to do so, you may cut off the tops of the old plants, 6 or 8 inches long, and transplant them. They readily strike root, if properly shaded and watered, and will produce vigorous plants, and continue in bearing until frost.

Irish Potatoes.—If you can procure old potatoes for setts, it will be better; but if you cannot, then make use of those from the spring crop. In this case they ought to be dug up and left in the sun to dry for a short time, and then put away until wanted for planting. They are very long in coming up, but you will generally have good sized potatoes in October and November. They should be left until a frost killed the tops.

Melons.—We have sometimes succeeded in having a fine crop of late melons from seeds planted in this month. We confess, however, that it is very uncertain, the rains and hot suns usually destroying the plant.

Spinage—A small quantity of Spinage may be sown towards the latter part of this month. They are very apt to be destroyed by the worms.

Snap Beans.—These can still be planted.

Celery.—You may continue to transplant Celery. For directions, see last month. Attention should be paid to earthing them up as fast as they grow, in order to blanch them.

Leeks.—Continue to set out Leeks. For directions, see last month.
